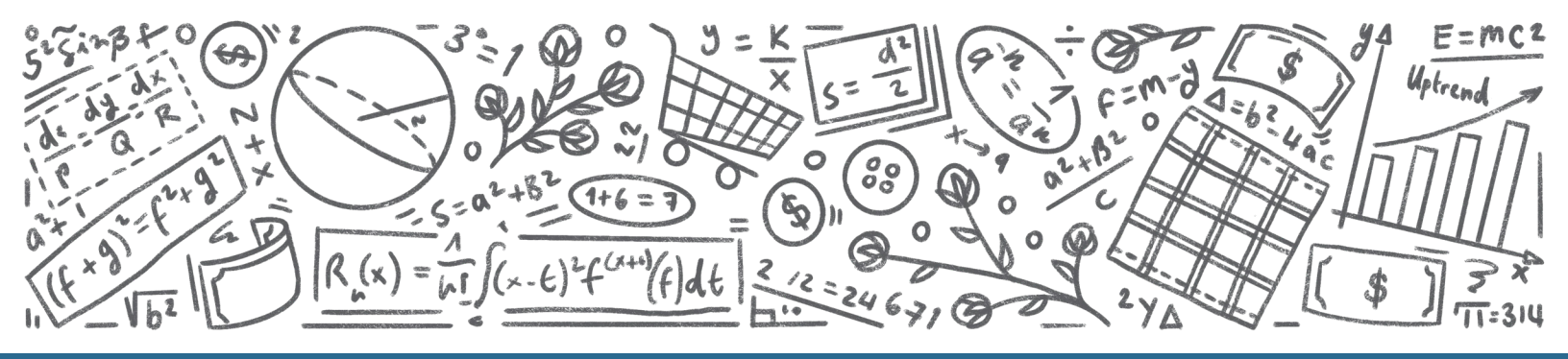


RETAIL MATH FOR PROFIT:

HOW TO THINK LIKE A BUYER

Contents

Introduction

In this course, you will learn about retail merchandising, especially basic retail math, which includes calculating markups, making pricing decisions, and calculating and planning markdowns. You will also learn about manipulating profit variables and calculating profit and loss statements, contribution margins, gross margins, and gross margin return on inventory or investments. Finally, you will learn how to plan, create, develop, and calculate merchandise plans for the retail organization.

Course Content

This course is organized into three main parts, and each part is divided into several sections. These should be studied in order. Each part is followed by review problems and a quiz, to provide practice in applying retail math formulas. Also included is a glossary defining the terminology used in merchandising and a list of resources for further study.

Part 1: Calculating Markup: A Merchandising Tool

- **Section 1, Mathematics for Profitable Merchandising,** introduces the subject of pricing.
- **Section 2, Markup as a Merchandising Tool: Basic Merchandising Mathematics,** defines the basic components of retail price and how they are used to calculate basic markup, individual markup, average markup, cumulative markup, initial markup, and maintained markup.
- **Section 3, Pricing Decisions,** explains how to make knowledgeable pricing decisions for a profitable retail store operation.
- **Section 4, Effective Markdown Techniques: Planning Markdowns,** explains how to minimize markdowns and to use markdowns as an effective merchandising tool.

Part 2: Manipulating Profit Variables: Merchandising for a Profit

- **Section 1, Basic Components of the Profit & Loss Statement,** introduces the concept of the profit and loss (P&L) statement.
- **Section 2, Skeletal Profit and Loss Statement: Calculating the P&L Components,** describes the format, construction, and calculation of the skeletal P&L statement. It examines the relationships among net sales, cost of goods sold, gross margin, operating expenses, and operating profit. It also discusses how to adjust the four profit variables (retail price, sales volume, cost of goods sold, and operating expenses) to increase store profit.
- **Section 3, Expanded Profit and Loss Statement: Calculating the P&L Components,** discusses in detail the expanded P&L statement components of gross sales, retail reductions, total cost of goods sold, and maintained markup. It also introduces the concepts of contribution margin and gross margin return on investment.

Part 3: Preparing the Six-Month Merchandise Plan

- **Section 1, Introduction to the Six-Month Merchandise Plan,** introduces the concept of the six-month merchandise plan (or budget) as a tool that relates profit objectives to merchandise planning for each six-month season of the retail year. It outlines the three-stage process by which the six-month merchandise plan is developed: preplanning, information collection, and calculation.

- **Section 2, The Environmental Scan,** describes the preplanning step of conducting an environmental scan, to evaluate the external and internal environmental factors that will influence decisions in developing the six-month merchandise plan.
- **Section 3, Collection of Numerical Data,** describes how to collect the data that provide the basis for calculating the new six-month merchandise plan, which includes analyzing the figures from the previous merchandising plan for the same season.
- **Section 4, Calculating the Six-Month Merchandise Plan,** describes the seven-step process of calculating the new six-month merchandise plan, using the information gathered in the previous stages of plan development.

Part 1

Calculating Markup: A Merchandising Tool

Part 1, Section 1
Mathematics for Profitable Merchandising

The key to a store's profitability is offering the **right merchandise** at the **right price.** The retail price of a store's merchandise must cover store operating expenses, reductions (markdowns, customer returns and allowances, shrinkage, employee discounts), and profit. If the price is too high, the customer will not purchase the item; if the price is too low, the store will not realize a profit.

The Importance of Pricing

Pricing is one of the most important aspects of retail merchandising: retail store operations revolve around sales volume or net sales, and the retail price of merchandise when sold becomes the net sales component of the profit and loss statement. Pricing must be based not only on what the customer is willing to pay but also on what price the customer expects to find at a particular store. In addition, market conditions must be taken into account, especially the state of the economy. The retail buyer must also consider these factors:

- The previous year's sales volume and markdowns for the specific merchandise category.
- The store's competition.
- The store's pricing policy.

Pricing is an art and science. Along with previous statistical store data, the buyer uses mathematical models to calculate the retail price of a store's merchandise or inventory. Part 1 of this course explores the use of those mathematical models and how the store's pricing policy impacts profitability.

Merchandising

"Merchandising" includes all the business activities involved in planning, creating, distributing, and marketing merchandise assortments and classifications to the target consumer while reflecting the company image. A different type of merchandising is used for each link or level in the supply chain (i.e., fiber, textile, apparel or home furnishings companies, retail stores).

The Levels of Product Merchandising

Merchandising can be thought of as the hub of retailing, since it affects all other functions of the retail store. The retail store has five functional divisions:

1. Merchandising
2. Management/operations
3. Sales promotion
4. Financial control
5. Human resources

Product Merchandising at the Retail Store Level

Product merchandising at the retail store level is defined as procuring or selecting and buying merchandise at wholesale cost and reselling the merchandise at a retail price. More specifically, retail product merchandising consists of all of the business activities involved in planning, procuring, presenting, and marketing and promoting merchandise for purchase by the consumer, while maintaining a profit for the retailer.

In 1927, Paul Mazur defined retail product merchandising as the five "rights" of merchandising:

1. The right merchandise
2. in the right quantities,
3. at the right time,
4. at the right price, and
5. in the right place.

Today's technology allows us to add a new "right" to Mazur's list:

6. in the right color, size, and style.

Product Merchandising at the Wholesale Level

Product merchandising at the wholesale level (in the manufacturing company) consists of planning, designing, developing, sourcing, marketing, and distributing a seasonal line of merchandise for a specific target consumer, while maintaining the design integrity of the product, reflecting the company image, and maintaining a profit for the company.

Equally, it can be defined as developing a cohesive package of seasonal merchandise that

1. reflects the needs and demands of the target consumer,
2. reflects the image, merchandising philosophy, pricing structure, and production and sourcing capabilities of the company, and
3. reflects trend directions of both the market and fashion cycle,
4. while providing a profit for the company.

The Central Role of the Merchandising Division

Merchandising divisions at both the retail and wholesale levels impact all company activities—the entire process of conducting and maintaining a profitable business in the marketplace. Both retailers and manufacturing companies must maintain appropriate inventory levels to meet sales goals and satisfy the wants and needs of their target consumers.

To be successful, a retail merchandiser must understand the merchandising processes and procedures at both the wholesale and retail levels. The store's vendor matrix (i.e., the brands and lines of merchandise it carries) and its merchandise mix and assortments depend upon merchandise availability at the wholesale level.

At both the manufacturing and retail levels, mathematical formulas must be combined with basic business and management theories and current business practices to make day-to-day merchandising decisions, solve business problems, and ensure a profitable operation.

The Importance of Retail Math

Retail math is an integral part of retail merchandising, affecting all of the store's activities and its entire merchandising process. In fact, financial decisions based on retail math drive the store's sales volume and usually dictate the budget and activities of its other divisions. In short, the application of retail mathematical formulas coupled with business and marketing theory is key to making wise day-to-day business decisions for a successful, profitable retail organization.

Part 1, Section 2
Markup as a Merchandising Tool: Basic Merchandising Mathematics

Part 1, Section 2.1
Basic Retail Pricing Components

Retail pricing is key to the operations and profitability of the retail store. Establishing retail prices involves understanding the components of retail price, the types of markup, and the external and internal factors affecting the store's pricing policy. The three basic components of pricing are **retail price**, **wholesale cost**, and **markup**.

In this section, all of the example calculations shown use the following numerical values:

- Retail price in dollars = $150.00
- Wholesale cost in dollars = $65.00
- Markup in dollars = $85.00

Rounding Numbers in Calculations

Always round both dollars and percentages to two decimal places.
For example:

- If the total is $5.344 or less, round it to $5.34.
- If the total is $5.345 or more, round it to $5.35.

Retail Price

The retail price is the price (dollar value) the consumer pays to the retailer when purchasing the merchandise. Retail price consists of the **wholesale cost of goods** plus the **markup**. Retail price may be expressed as either dollars or a percentage. Expressed as a percentage, the retail price always equals 100%. For example, if pricing components are shown in a pie chart, the retail price is the whole pie.

The Retail Price Component Always = 100%

Retail price = $150.00
Wholesale cost = $65.00
Markup = $85.00

The Retail Price Pie

The following formula is used to calculate **retail price** when wholesale cost and markup dollars are known:

Retail $ = Cost $ + Markup $

Calculate the Retail Price in Dollars

Retail $ **= ?**	Retail $ = Cost $ + Markup $
Cost $ = $65.00	= $65.00 + $85.00
Markup $ = $85.00	**= $150.00**

Wholesale Cost

The wholesale cost (or gross wholesale cost of goods) includes the amount the retailer pays the vendor (i.e., manufacturer, contractor, importer, jobber, wholesaler, or other retailer) for merchandise purchased to be sold at the retail store. The vendor sends the retailer an invoice for the goods—an itemized bill showing the unit and extended costs for the items purchased. The **invoiced cost** reflects **quantity discounts** and **trade discounts,** which the vendor deducts before sending the invoice to the retailer. The wholesale cost also includes the costs to ship the goods to the retailer plus insurance to cover the merchandise during shipping.

Invoiced Cost vs. Wholesale Cost

Transportation and shipping insurance costs generally are paid by the retailer and included on the vendor's invoice, but are accounted for separately by the retailer. In this course, **invoiced cost** refers only to the cost of the goods themselves, after trade and quantity discounts. **Wholesale cost** refers to the i**nvoiced cost + transportation cost.**

Some vendors may also offer the retailer **vendor allowances** (e.g., to offset the costs of advertising, display, or markdowns). However, vendor allowances usually reduce the cost of operations, rather than the cost of merchandise, and are not deducted from the wholesale cost.

In addition, companies or vendors may give the retailer **cash discounts** for paying the invoice by the specified due date. These discounts are stated in the **terms of sale** (i.e., discounts, dating, delivery specifications). Cash discounts are deducted from the wholesale cost of goods when the retailer pays the invoice, but are accounted for separately by the retailer.

The following formula is used to calculate wholesale cost when retail price and and markup are known:

Cost $ = Retail $ – Markup $

Calculate the Wholesale Cost in Dollars

Cost $ **= ?**	Cost $ = Retail $ – Markup $
Retail $ = $150.00	= $150.00 – $85.00
Markup $ = $85.00	**= $65.00**

Markup

The markup component of pricing is the amount the retailer adds to the wholesale cost in order to determine the initial or original retail price of an item. The markup amount must be large enough to cover operating expenses, retail reductions (customer returns and allowances, employee discounts, markdowns, and shrinkage/shortage), and profit.

Like retail price and wholesale cost, markup may be expressed either in dollars or as a percentage. Percentages are useful for these purposes:

- Making comparisons across merchandise classifications, departments, and stores.
- Planning retail prices and stock levels.
- Calculating expenses and profit.

Establishing Markup

Retail management often specifies the buyer's **markup goal** as a percentage. Several different pricing methods may be used to establish markup — these methods are discussed in Part 1, Section 3. One example is a **keystone markup**, in which the retailer doubles the wholesale cost. However, keystone markups are less prevalent now than in the past.

Markup percentages vary within and across merchandise classifications, departments, and retail store types. For example, some stores operate on high volume and low markups, while others maintain high markups but provide added services for the target consumer.

Markup percentages may be calculated based on either retail price or wholesale cost. However, markup is usually expressed as a percentage of retail price, since most stores today operate on the retail method of accounting. Markup percentages based on retail price are always smaller than those based on wholesale cost. By definition, markup based on retail price can never exceed 100%, whereas markup based on wholesale cost often exceeds 100%.

The following formula is used to calculate the markup in dollars when retail price and wholesale cost are known:

Markup $ = Retail $ – Cost $

Calculate the Markup in Dollars

Markup $ = **?**
Retail $ = $150.00
Cost $ = $65.00

Markup $ = Retail $ – Cost $
= $150.00 – $65.00
= $85.00

The following formula is used to calculate the markup percentage based on retail price when retail price and markup in dollars are known:

Markup % (Retail) = Markup $ ÷ Retail $

Calculate the Markup Percentage (Retail)

Markup % **= ?**
Retail $ = $150.00
Markup $ = $85.00

Markup % = Markup $ ÷ Retail $
= $85.00 ÷ $150.00
= 56.67%

The following formula is used to calculate the markup percentage based on wholesale cost when wholesale cost and markup in dollars are known:

Markup % (Cost) = Markup $ ÷ Cost $

Calculate the Markup Percentage (Cost)

Markup % **= ?**
Cost $ = $65.00
Markup $ = $85.00

Markup % = Markup $ ÷ Cost $
= $85.00 ÷ $65.00
= 130.77%

Calculate Markup Percentage Based on Retail Price

Most apparel retailers use the retail method of accounting, and therefore calculate markup percentage based on retail price (not wholesale price). **Throughout this course, markup percentage is calculated based on retail price.**

Mixtures of Dollars and Percentages

When retail buyers are given two of the pricing components, they must calculate the value of the third component. The known components are often provided as mixtures of dollars and percentages, so the relationships among these components must be manipulated in order to allow calculation of the missing component.

Keep in mind that the retail price always equals 100%. Therefore, to convert markup or wholesale cost percentages to dollars, the percentages are multiplied by the retail price:

Cost $ = Retail $ × Cost %

Markup $ = Retail $ × Markup %

Following are examples of how to calculate basic retail pricing components from partial data provided either in dollars or as percentages.

Examples

Convert Markup Percentage to Dollars

Markup $ = **?**
Retail $ = $150.00
Markup % = 56.67%

Markup $ = Retail $ × Markup %
= $150.00 × 56.67%
= $85.00

Sometimes it is most efficient to solve for a percentage first and then convert it to dollars.

Calculate Wholesale Cost from Retail Price & Markup Percentage

Cost $ = **?**
Retail $ = $150.00 (= 100%)
Markup % = 56.67%

Cost % = Retail % – Markup %
= 100% – 56.67%
= 43.33%

Cost $ = Retail $ × Cost %
= $150 × 43.33%
= $65.00

Calculate Retail Price from Wholesale Cost & Markup Percentage

Retail $ = **?**
Cost $ = $65.00
Markup % = 56.67%

Cost % = Retail % – Markup %
= 100% – 56.67%
= **43.33%**

Retail $ = Cost $ ÷ Cost %
= $65.00 ÷ 43.33%
= $150.00

Retail merchandisers and buyers use these basic formulas on a day-to-day basis to analyze financial information and evaluate how the retail price elements may affect their buying decisions and, ultimately, the store's profit.

Expressing Percentages

A percentage can also be expressed as a decimal fraction. For example, 100% = 1.00; 56.57% = 0.5667; and 43.33% = 0.4333. **Throughout this course, decimal fractions are expressed as percentages.**

Part 1, Section 2.2
Individual Markup and Gross Markup

Individual markup is the markup calculated for one item of merchandise or for one **stock keeping unit** (SKU) in a retailer's inventory. This is the markup (in dollars) added to the wholesale cost to determine the retail price for one item.

Gross markup is the markup calculated for multiple units of merchandise, or for entire departments, or for all of a store's or company's merchandise:

Gross Markup $ = Markup $ Per Unit × Number of Units

Calculate Gross Markup in Dollars

Number of Units = 20
Cost $ Per Unit = $50.00
Retail Price $ Per Unit = $110.00

Individual Markup $ = Retail $ – Cost $
= $110.00 – $50.00
= $60.00

Gross Markup $ = Individual Markup $ × Number of Units
= $60.00 × 20
= $1,200.00

Caculating the Gross Markup Percentage for the Total Order

A retail buyer will often order several different types of merchandise on the same order copy (contract of purchase), with different wholesale costs and terms for the different types of merchandise. For example, an apparel buyer may order several different styles of sweaters from a branded apparel company. An order thus will often include multiple units in different product classifications and with differing wholesale costs.

Therefore, the gross markup percentage for the total order cannot be calculated by averaging the markup percentages of the individual items (unless the quantities of all items are identical). Instead, the markup percentage for the total order is calculated by determining the total cost dollars, total retail dollars, and total markup dollars for the entire order, by making the following calculations:

1. The retail price for each type of item.
2. The total retail price for all items of each type.
3. The total wholesale cost for all items of each type.
4. The overall total retail price and total wholesale cost for all items.
5. The total markup dollars for the order.
6. The gross markup percentage for the order.

Example

In the following example of calculating the gross markup percentage, an apparel buyer has placed an order for three styles of women's sweater. The cost and quantity is different for each style, and the retail price is based on a keystone markup (double the cost) plus $10:

Style	Unit Cost	Quantity
Cardigan	$30.00	18
V-neck pullover	$25.00	24
Sweater vest	$20.00	12

1. Calculate Retail Price from Cost & Markup

Retail $ = (Cost $ × 2) + $10.00

Cardigans: Retail $ = ($30.00 × 2) + $10.00
= $60.00 + $10.00
= $70.00

Pullovers: Retail $ = ($25.00 × 2) + $10.00
= $50.00 + $10.00
= $60.00

Vests: Retail $ = ($20.00 × 2) + $10.00
= $40.00 + $10.00
= $50.00

2. Calculate Total Retail Price for Each Type of Item

Total Retail $ = Retail $ Per Unit × Number of Units

Cardigans: Total Retail $ = $70.00 × 18
= $1,260.00

Pullovers: Total Retail $ = $60.00 × 24
= $1,440.00

Vests: Total Retail $ = $50.00 × 12
= $600.00

3. Calculate Total Wholesale Cost for Each Type of Item

Total Cost $ = Cost $ Per Unit × Number of Units

Cardigans: Total Cost $ = $30.00 × 18
= $540.00

Pullovers: Total Cost $ = $25.00 × 24
= $600.00

Vests: Total Cost $ = $20.00 × 12
= $240.00

4. Calculate Overall Total Price and Total Cost

Total Retail $ = Total Retail $ Item A + Total Retail $ Item B + Total Retail $ Item C
= $1,260.00 + $1,440.00 + $600.00
= $3,300.00

Total Cost $ = Total Cost $ Item A + Total Cost $ Item B + Total Cost $ Item C
= $540.00 + $600.00 + $240.00
= $1,380.00

5. Calculate Gross Markup in Dollars for the Order

Gross Markup $ = Total Retail $ – Total Cost $
= $3,300.00 – $1,380.00
= $1,920.00

6. Calculate Gross Markup Percentage for the Order

Gross Markup % = Gross Markup $ ÷ Total Retail $
= $1,920.00 ÷ $3,300.00
= 58.18%

Part 1, Section 2.3
Average Markup

Every retailer must establish a **markup goal** for each product category or department within the store, and for the store itself. However, the markups for different items within a product category or department will necessarily differ. An astute buyer will not spend the entire budget for a given product category at the beginning of the season or on just one market trip. New product offerings may be made available throughout the selling season, and most vendors frequently offer special promotions, closeouts, or off-price merchandise. The buyer needs a reserve budget in order to take advantage of opportunities that arise throughout the season, and which may be key to meeting markup goals for the product classification, department, or store.

Markups Will Differ Within a Product Category

Each product category may be purchased from several different vendors, each offering its seasonal line at different wholesale costs. Vendors may also offer different styles or versions of an item at different costs, and the markups will differ among these items. Also, the markup may be higher for a private label than a designer or national brand. Promotional goods may have lower markups than the goods initially purchased, and exclusive goods may have higher markups than basic and staple merchandise.

To determine the overall markup for the season (and to ensure profitability), markup on merchandise already in the inventory or on order must be combined with markup on additional purchases yet to be made. Buyers therefore often need to calculate averages related to markup. In addition to calculating the markup percentage on an order (as described in Part 1, Section 2.2), buyers often make these three types of calculations:

1. The markup percentage needed on the balance of purchases in order to meet the established markup goal.
2. The average cost when the retail price and markup percentage are given.
3. The average retail price when the cost and needed markup have been established.

Calculate the Markup Percentage Needed on the Balance of Purchases

The markup percentage goal for the department usually is established by management based on the goals for the entire store. Retail buyers must purchase merchandise throughout the selling season in order to meet customer demand and to meet the department's sales and markup goals. After determining the markup percentage on the season's initial purchases, the buyer must determine what markup percentage is needed for the rest of the season's purchases in order to meet the seasonal markup goal for the department.

Example

A buyer needs to purchase a total of $12,000 at retail of cotton or cotton-blend knit tops for the spring selling season. She has already purchased 8 dozen basic cotton T-shirts (8 × 12 = 96) and 4 dozen cotton tank tops (4 × 12 = 48). The basic T-shirts cost $20.00 each and will retail

for $42.00, and the tank tops cost $10.00 each and will retail for $18.00. The buyer's overall markup goal is 52%. **What does the markup percentage need to be on the rest of the knit tops to be purchased during the season?**

To determine how to solve this problem, set up a chart showing the information already known and the unknowns that need to be calculated:

Component	Total Needs	Purchases To Date	Balance to Purchase
Retail $	$12,000.00	96 T-shirts × $42.00 48 tanks × $18.00	**$?**
Cost $	**$?**	96 T-shirts × $20.00 48 tanks × $10.00 **= $?**	**$?**
Markup %	52%	—	**$?**

First, calculate the total wholesale cost to purchase knit tops to be sold for $12,000 at retail at an overall markup of 52%.

1. Calculate Total Cost To Purchase the Tops

Markup goal = 52%
Retail $ = $12,000.00

Cost % = Retail % – Markup %
= 100% – 52%
= 48%

Cost $ = Retail $ × Cost %
= $12,000.00 × 48%
= $5,760.00

Second, calculate the total retail value and total cost of the tops that have already been purchased.

2. Calculate Total Retail Value and Total Cost of Purchased Tops

Retail $

96 × $42.00 = **$4,032.00**
48 × $18.00 = **$864.00**
$4,032.00 + $864.00 **= $4,896.00**

Cost $

96 × $20.00 = **$1,920.00**
48 × $10.00 = **$480.00**
$1,920.00 + $480.00 **= $2,400.00**

Third, calculate the balance at retail and the balance at cost, using the figures calculated in steps 1 and 2.

3. Calculate Balance at Retail and Balance at Cost

Retail $ Balance = Total Retail $ – Retail $ Purchases To Date
= $12,000.00 – $4,896.00
= $7,104.00

Cost $ Balance = Total Cost $ – Cost $ Purchases To Date
= $5,760.00 – $2,400.00
= $3,360.00

Finally, use the figures calculated in step 3 to calculate the markup balance in dollars, and use that to calculate the markup percentage needed on the balance of purchases in order to meet the established markup goal:

4. Calculate Markup Percentage Balance

Markup $ Balance = Retail $ Balance – Cost $ Balance
= $7,104.00 – $3,360.00
= $3,744.00

Markup % Balance = Markup $ Balance ÷ Retail $ Balance
= $3,744.00 ÷ $7,104.00
= 52.70%

Here is the original chart updated to show the calculated total cost and balances:

Component	Total Needs	Purchases	Balance to Purchase
Retail $	$12,000.00	96 T-shirts × $42.00 48 tanks × $18.00	**$7,104.00**
Cost $	**$5,760.00**	96 T-shirts × $20.00 48 tanks × $10.00 **= $3,360.00**	**$3,360.00**
Markup %	52%	—	**52.70%**

Calculate Average Cost from Given Retail Price and Markup Percentage

For special sales or promotional events, a product classification bought from several vendors at different costs may be offered to the consumer at the same retail price. After the purchase is made from the first vendor, the buyer must determine what wholesale cost can be paid for the remainder of the items in order to achieve the desired markup percentage.

Example

A buyer plans to purchase a total of 400 pairs of juniors' cotton denim jeans for a back-to-school sale, to retail at $59.99. She has already purchased 250 pairs of jeans at a wholesale cost of $32.00. **What is the highest unit cost the buyer can pay for the remainder of the jeans while achieving a 52% markup?**

Start by setting up a chart showing the information already known and the unknowns that need to be calculated:

Component	Total Needs	Purchases To Date	Balance to Purchase
Retail $	$59.99 × 400 = **$?**	250 jeans	**#?**
Cost $	**$?**	$32.00 × 250 = **$?**	**$?**
Markup %	52%	—	—

First, calculate the total retail value of 400 pairs of jeans and the total wholesale cost. (As we have already seen, the retail price always equals 100%, so the cost percentage equals 100% minus the markup percentage.)

1. Calculate Total Retail Value and Total Cost of Jeans

Retail $ = Unit Retail Price × Number of Units
= $59.99 × 400 = **$23,996.00**

Cost $ = Retail $ × Cost %
= $23,996.00 × 48% = **$11,518.08**

Second, calculate the wholesale cost of the jeans purchased to date and the wholesale cost to purchase the remainder of the jeans needed (i.e., the balance of cost):

2. Calculate Cost of Jeans Purchased To Date and Balance of Cost

Cost $ Purchased = Unit cost × Number of Units
= $32.00 × 250 = **$8,000.00**

Balance of Cost $ = Total Cost $ – Cost $ Purchased To Date
= $11,518.00 – $8,000.00 = **$3,518.08**

Finally, calculate the number of units yet to be purchased and the highest unit cost for them that would achieve the desired 52% markup:

3. Calculate Unit Cost of Jeans To Be Purchased

Units To Be Purchased = Total Units Needed – Units Purchased To Date
= 400 – 250 = **150**

Unit Cost for Balance of Purchases = Balance of Cost $ ÷ Units To Be Purchased
= $3,518.08 ÷ 150 = **$23.45** (rounded*)

*The unit cost must always be rounded down, not up, so that the cost does not exceed the balance to purchase.

Here is the orginal chart updated to show the calculated total retail value and total cost, cost of units purchased to date, balance of units to be purchased, balance of retail cost, and maximum unit cost to achieve the desired markup:

Component	Total Needs	Purchases	Balance to Purchase
Retail $	**$23,996.00**	250 jeans	**150**
Cost $	**$11,518.08**	250 × $32.00 = **$8,000.00**	**$3,518.08** **Unit Cost = $23.45**
Markup %	52%	—	—

Calculate the Average Retail Price Based on the Cost and Needed Markup

As discussed above, buyers often purchase the same product classifications from several vendors at different wholesale costs, but offer them to the consumer at the same retail price. In the example above, the retail price was already established, and the buyer had to calculate how much to spend on the balance of the items needed while achieving the desired markup. In other situations, the buyer must calculate the average retail price at which already-purchased items must be sold in order to meet the target markup.

Example

For a summer sale, a buyer purchased two dozen cotton sundresses at a wholesale cost of $15.00 each, two dozen cotton-blend sundresses at $18.00 each, and a select group of one dozen cotton sundresses at $22.00 each. **What unit retail price should be set for the sundresses in order to achieve a 46% markup?**

The chart showing known and unknown information in this case includes no balance to purchase, and the only "need" is the 46% markup:

Component	Purchases
Retail $	Total Retail $ = Cost $ ÷ Cost % Unit Retail Price = Total Retail $ ÷ Number of Units
Cost $	$15.00 × 24 = **$?**; $18.00 × 24 = **$?**; $22.00 × 12 = **$?**

1. Calculate the Total Wholesale Cost of the Sundresses

Total Cost $ = Cost $ per Unit × Number of Units

= $15.00 × 24 = $360.00
+ $18.00 × 24 = $432.00
+ $22.00 × 12 = $264.00
= $1,056.00

2. Calculate the Total Retail Price Needed for a 46% Markup

Total Retail $ = Cost $ ÷ Cost % (Cost % = 100% – Markup)

= $1,056.00 ÷ 54%
= $1,955.56

3. Calculate the Unit Retail Price per Sundress

Unit Retail Price = Total Retail $ ÷ Number of units

= $1,995.56 ÷ 60
= $32.59

The Importance of Understanding and Applying Formulas

From the examples above, it is evident that understanding how to apply the appropriate formulas in a day-to-day business scenario is one of the most important responsibities of the retail merchandiser and buyer. Information without the formulas is only statistical data, and applying inappropriate formulas to critical retail problems hinders the profitable operations of a retail establishment.

Part 1, Section 2.4
Cumulative Markup

Cumulative markup is the average markup for a given period of time during a retail year (e.g., month, quarter, six months, or season). It may be calculated for the season to date or for an inventory that has accumulated during another specified period. It includes the beginning inventory for that period (often given in retail dollars) plus any additional purchases delivered during the period (usually given as wholesale cost dollars). Cumulative markup dollars are calculated as the difference between the total wholesale cost and the total retail price of all merchandise handled during a given period.

Cumulative markup is an aggregate markup on merchandise with differing markups. As discussed in Part 1, Section 2.3, buyers purchase goods for the beginning of a new selling season; then, throughout the season, they purchase additional goods to replenish inventory or for special promotions or sales. The initial inventory may have included goods purchased at different wholesale costs and offered at different markups, and goods purchased later for special sales and promotions may have lower markups than the goods initially purchased.

Retailers use the following formulas to calculate cumulative markup dollars and cumulative markup percentage:

Cumulative Markup $ = Total Retail $ – Total Cost $

Cumulative Markup % = Cumulative Markup $ ÷ Cumulative Retail $

Calculate the Cumulative Markup Percentage

To calculate cumulative markup percentage, calculate the following quantities:

1. The unknown retail value for either opening inventory or purchases.
2. The total retail value of opening inventory and purchases.
3. The unknown wholesale cost of either opening inventory or purchases.
4. The total wholesale cost of opening inventory and purchases.
5. The total markup dollars.
6. The cumulative markup percentage for the specified period of time.

Example

A buyer has an opening inventory of $100,000 at retail with a markup of 52%. For the rest of the season, the buyer plans to spend $48,000 at cost and to establish a 46% markup on the purchases. **What will the cumulative markup percentage be for the season?**

1. Calculate the Unknown Retail Value of Remaining Purchases

Retail Value $ of Purchases = Cost $ ÷ Cost %

= $48,000.00 ÷ 54% (Cost % = 100% – 46%)

= $88,888.89

2. Calculate the Total Retail Value of the Opening Inventory and Remaining Purchases

Total Retail $ = Retail Opening Inventory $ + Retail Purchases $

= $100,000.00 + $88,888.89

= $188,888.89

3. Calculate the Unknown Wholesale Cost of Opening Inventory

Cost $ of Opening Inventory = Retail $ × Cost %

= $100,000.00 × 48% (Cost % = 100% – 52%)

= $48,000.00

4. Calculate the Total Wholesale Cost of Opening Inventory and Purchases

Total Cost $ = Cost $ of Opening Inventory + Cost $ of Purchases

= $48,000.00 + $48,000.00

= $96,000.00

5. Calculate the Total Markup Dollars for the Season

Total Markup $ = Total Retail $ – Total Cost $

= $188,888.89 – $96,000.00

= $92,888.89

6. Calculate the Cumulative Markup Percentage for the Season

Cumulative Markup % = Total Markup $ ÷ Total Retail $

= $92,888.89 ÷ $188,888.89

= 49.18%

Part 1, Section 2.5
Initial Markup

The difference between the wholesale cost and the original retail price is the **initial markup**. This is the "hoped for" markup, and retailers do not expect to sell all merchandise at the initial markup. Items often must be marked down to meet customer expectations, create sales volume, or clear inventory. Additional items will be discounted because of customer returns and allowances and employee discounts, and retailers must always plan for inventory shrinkage (the difference between the inventory on paper and in physical counts) due to damage and to employee and customer pilferage.

The initial markup must cover **operating expenses, retail reductions** (markdowns, customer returns and allowances, employee discounts, and shrinkage), **transportation costs, alterations,** and **profit,** and it takes into account **cash discounts** from the vendor.

Retailers must establish policies when setting initial markup in order to ensure adequate operating expenses and profit. Markups will likely be different for different product categories in the merchandise mix and for different brands and styles within the same product classifications. For example, initial markups might be higher for high-fashion items with high markdown risks, or for merchandise exclusive to one particular retailer within a geographic location.

A retailer must also consider the competition's markup, especially on designer goods and national brands. Other factors to be considered include high shipping or handling costs for certain merchandise, or analysis of the previous year's markdowns on specific product classifications.

Initial markup is the only markup calculated using **planned gross sales** figures. It takes into consideration that not all merchandise sells at the "regular" (initial) price, and it must be carefully planned.

Gross and Net Sales

Gross sales are the total retail value of all sales transactions, before any reductions.

Net sales are defined as gross sales minus retail reductions (markdowns, customer returns and allowances, employee discounts, and shrinkage). Net sales are also known as the store's "sales volume" or "operating income."

Formulas for initial markup, both in dollars and as a percentage, are given below, with example calculations. All examples use the following dollar figures for calculations:

Gross Sales	**150,000**	**Shrinkage**	**3,000**	**Transportation**	**1,200**
Expenses	**60,000**	**Customer Returns**	**1,000**	**Alterations**	**800**
Profit	**10,800**	**Employee Discounts**	**1,000**	**Cash Discounts**	**2,800**
Markdowns	**15,000**				

Preliminary Calculations

The formulas for calculating initial markup may use the dollar amounts of reductions and of net sales. These are calculated from the figures shown above:

Reductions $ = Markdown $ + Discounts $ + Shrinkage $ + Returns $

Net Sales $ = Gross Sales $ – Reductions $

Calculate Reductions and Net Sales

Reductions $ = 15,000 + 1,000 + 3,000 + 1,000
= $20,000

Net Sales $ = 150,000 – 20,000
= $130,000

Calculate Initial Markup

Initial Markup $ = Operating Expenses $ + Profit $ + Transportation $ + Reductions $ + Alterations $ – Cash Discounts $

Initial Markup % = Initial Markup $ ÷ Gross Sales $

Use the figures above to calculate the dollar amount of the initial markup, and use the initial markup in dollars to calculate the initial markup percentage.

Calculate Initial Markup in Dollars and Initial Markup Percentage

Initial Markup $ = 60,000 (Expenses)
\+ 10,800 (Profit)
\+ 1,200 (Transportation)
\+ 20,000 (Reductions)
\+ 800 (Alterations)
– 2,800 (Cash Discounts)
= 90,000

Initial Markup % = 90,000 ÷ $150,000 (Gross Sales)
= 60.0%

If the initial markup percentage is known, the initial markup $ can be calculated by this formula:

Initial Markup $ = Gross Sales $ × Initial Markup %

Initial markup percentage can also be calculated by this formula:

Initial Markup % = (Operating Expenses $ + Profit $ + Transportation $ + Reductions $ + Alterations $ – Cash Discounts $) ÷ Gross Sales $

Use the formulas above, with the same figures as in the previous examples, to calculate the initial markup in dollars and the initial markup percentage:

Calculate Initial Markup in Dollars and Initial Markup Percentage

Initial Markup $ = $150,000 (Gross Sales) × 60.0% (Initial Markup %)

= $90,000

Initial Markup % = 60,000 (Expenses)
+ 10,800 (Profit)
+ 1,200 (Transportation)
+ 20,000 (Reductions)
+ 800 (Alterations)
– 2,800 (Cash Discounts)

= $90,000 ÷ $150,000 (Gross Sales $)

= 60.0%

Part 1, Section 2.6
Maintained Markup

As discussed in Part 1, Section 2.4, retailers do not expect to sell all merchandise at the initial markup. Items that do not sell within a given period of time (set by each retailer based on consumer demand) must be reduced in retail price. Therefore, markup does not remain constant throughout the selling season. The markup at which the merchandise actually is sold to consumers is called the **maintained markup,** also known as the **achieved markup.** Although the maintained markup could theoretically be the same as the initial markup, it seldom is.

Maintained markup is the difference between the gross wholesale cost of the goods and the retail price at which the goods are sold. It is based on **actual sales,** not planned sales, and reflects what actually happens in the retail store, such as markdowns. In other words, it is the markup that relates the wholesale cost of goods, other costs charged by the vendor, and the costs of handling the goods to the profitability of the store.

Maintained Markup vs. Gross Margin

Maintained markup is lowered from the initial markup by reductions, but it does **not** account for the impacts of cash discounts and alteration costs. In contrast, the **gross margin** reflects the cost of alterations and the savings from cash discounts.

Maintained markup is calculated as part of the expanded profit and loss (P&L) statement (which is discussed in detail in Part 2, Section 3). It can be expressed both in dollars and as a percentage, but is usually expressed as a percentage of net sales. The relationships between gross sales, net sales, maintained markup, and gross margin are illustrated in the table below, which is a portion of an expanded P&L statement using the same figures as used in Section 2.5 to calculate initial markup:

Component	Dollars	Percentage
Gross Sales	**150,000**	
– Reductions	20,000	
= Net Sales	**130,000**	**100%**
– Invoiced Cost of Goods	70,000	
– Transportation	1,200	
= Maintained Markup	**$?**	**?%**
– Alterations	800	
+ Cash Discount	2,800	
= Gross Margin	**60,800**	**46.77%**

Formulas for maintained markup, both in dollars and as a percentage, are given below, with example calculations. The examples use the the same dollar amounts used in the examples in Section 2.5 and in the expanded P&L statement shown above.

Calculate Maintained Markup

The following formulas are used to calculate maintained markup:

Maintained Markup $ = Net Sales $ – Invoiced Cost of Goods $ – Transportation $

Maintained Markup % = Maintained Markup $ ÷ Net Sales $

Calculate Maintained Markup in Dollars and as a Percentage

Maintained markup $ = $130,000 (Net Sales)
– $70,000 (invoiced Cost of Goods)
– $1,200 (Transportation)
= **$58,800**

Maintained Markup % = $58,800 ÷ $130,000 (Net Sales)
= **45.23%**

Note that the gross wholesale cost of goods in dollars is equal to the invoiced cost of goods plus the cost of transportation. Therefore, the formula for maintained markup in dollars can also be expressed as follows:

Maintained Markup $ = Net Sales $ – Gross Wholesale Cost of Goods $

Note also that the gross margin is equal to the maintained markup plus the cash discount less the cost of alterations:

Maintained Markup $ = Alterations $ – Cash Discount $ + Gross Margin $

If the maintained markup percentage is known, the maintained markup in dollars can be calculated from net sales:

Maintained Markup $ = Net Sales $ × Maintained Markup %

On your own, practice calculating maintained markup using these additional formulas; the result should always be the same (45.23%).

Part 1, Section 3
Pricing Decisions

Part 1, Section 3.1
Pricing Strategies

Retail pricing is based on both quantitative and qualitative decisions and is both an art and a science. In addition to understanding the retail price components and knowing how to use and manipulate those components in mathematical formulas, the retailer must also formulate effective pricing strategies and policies in order to establish the "right price" for each category of merchandise.

A retailer's **pricing strategy** is usually formulated by management, based on the company's strategic plan, marketing objectives, and overall profit goals. The pricing strategy includes the **pricing policies**—the procedures and guidelines—used to price the store's merchandise. The strategy also includes a plan and techniques for implementing those policies, plus guidelines for adjusting pricing when consumer demand or market conditions change.

The Importance of a Pricing Strategy

Strategic pricing procedures and guidelines with manageable action plans ensure that the retailer both meets the target consumers' price expectations and attains the store's profitability goals.

External Factors That Affect Pricing

Pricing strategies and policies are also influenced by **external environmental factors:**

- consumer, industry, and market trends
- societal and cultural trends
- economic trends (e.g., unemployment rates, interest rates, tax rates)
- political happenings
- government regulations
- global sourcing trends

Another major external factor that affects retail pricing is **competition.** Because many retailers carry the same brands and identical merchandise classifications, the astute buyer must price merchandise competitively. Customers are unlikely to pay higher prices at one store when they can walk across the street to another store and buy the same merchandise at lower prices from the competition.

Internal Store Components That Affect Pricing

The retailer must consider a multitude of internal store components when deciding on markup percentages and pricing products, including store type and image, customer services offered, and type of merchandise.

Store Type, Image, and Customer Services

The store type affects consumers' price expectations. Stores with a prestigious image can demand a higher price for their merchandise than can discount, off-price, or mass-merchant retailers. In fact, the business models of discount stores often are based on sparse décor, high sales volume, and low markup. A more exclusive store with beautiful décor in a high-rent area takes higher markups on its merchandise assortment while providing exclusivity for the consumer.

The types and extent of customer services provided by a store also help to dictate retail prices. For example, a specialty store that offers specialized customer services also must take higher markups in order to meet profit goals.

Type of Merchandise

The type of merchandise carried by a retailer has a major effect on retail pricing, as some merchandise classifications carry higher markups than others. One factor that varies among product types is risk—some types of products carry a higher risk of reductions through markdowns or other losses. For example, in contrast with with basic or staple merchandise categories, trendy or high-fashion seasonal merchandise is at a greater risk of requiring costly markdowns in order to sell. Therefore, a higher markup must be planned in order to cover those reductions.

Another example is items that carry a higher risk of theft, such as expensive designer goods. Such goods must be merchandised in a specific location in an exclusive setting, and may require the use of highly qualified sales associates. Additional markup therefore is needed to cover these higher operating expenses.

Furthermore, the merchandise brand type (i.e., designer, national, private, licensed, store, or generic) influences the markup. Nationally branded products are usually sold at or near the same retail price by all retailers in the same geographic location, since these retailers likely paid the same wholesale cost and similar shipping costs for the goods.

The Role of Private-Label Merchandise

In today's competitive market environment, major retailers are developing private-label products for their stores. The markup most commonly is higher on private-label merchandise than on nationally branded products, since the retailer controls the entire development of the product, including pricing.

However, some retailers use private labels to create store traffic, taking a lower markup on the private-label merchandise in order to create value for the consumer. Retailers may also use private labels to help position their store and/or product assortment in the marketplace, in order to differentiate themselves from the competition.

Consumer Perceptions

The consumer's perception of price is a major factor in retail pricing. Consumers usually expect to receive a certain value for a specific price. To the consumer, "value" may represent a combination of price, product attributes and features, positioning of the product in the

marketplace, the product's fashion level, and image cues, such as brand and packaging, along with any other factors the consumer considers to be important.

Consumers generally want the greatest value for the lowest price. However, they will pay higher prices if they desire an exclusive or specific brand of merchandise. The problem for retailers is that each consumer defines the value/price equation differently. It is a challenge for the retailer to address the varying definitions of "value" by the store's various target consumers.

Operational Factors

Finally, when planning markup, the retailer must consider operational factors such as promotional costs of marketing the merchandise and store. To reach sales goals, the retailer must create traffic in the store. For special sales or promotions, the retailer may select specific merchandise classifications to sell at near-wholesale cost, or even below. The pricing of these products, called "loss leaders," must be taken into account when the retailer determines initial markup.

Factors That Influence Pricing Strategy

Strategic Plan, Marketing Objectives, and Overall Profit Goals

External Factors
- Environmental factors — e.g., industrial, cultural, and economic trends
- Competition

Internal Store Factors
- Store type and image
- Customer services offered
- Type of merchandise
  - Product classifications
  - Risk of reductions
  - Brand type

Consumer Perceptions of Value for Price

Operational Factors (e.g., promotional costs)

Based on the above factors, the retailer must establish a realistic pricing strategy for the retail venue. No one strategy is appropriate for all store types, merchandise categories, or geographical markets.

Part 1, Section 3.2
Pricing Types

In formulating a pricing strategy, retailers generally choose among different types of pricing models in order to select the best strategy and pricing type for the store type, image, and product offering. However, the different product categories or classifications in a retailer's merchandise mix will likely require different pricing strategies or types.

Retailers use the following major pricing strategies and their associated pricing types:

- Cost-oriented pricing
- Competitive pricing
- New-product pricing
- Consumer demand pricing
- Customer value-based pricing

Cost-Oriented Pricing

This very common pricing strategy employs markup pricing. The retail price is based on the costs of developing, producing, distributing, marketing, and selling the product and realizing a profit. A standard markup is added to the cost of the product, which must cover wholesale cost, operating expenses, reductions, and profit (as discussed in Section 2).

Competitive Pricing

This popular pricing strategy is based on conducting a competitive analysis of similar or identical products carried by both the retailer and its competition. Retail prices are then based on the competitors' pricing strategies, merchandise mix, and other market offerings. As a result of the competitive analysis, a retailer may choose to apply at-market, above-market, or below-market pricing.

At-Market Pricing

The most common type of competitive pricing is at-market pricing, whereby the retailer offers similar or identical merchandise at prices similar to those of its competitors.

Above-Market Pricing

A retailer may choose to price its merchandise with a higher markup than the competition. However, in order to successfully use above-market pricing (also known as prestige pricing), the retailer must maintain an upscale image with attractive décor, an exclusive merchandise mix, and value-added customer services and amenities, in a desirable location.

Below-Market Pricing

If a retailer has lower overhead than its competition, operates on a lower profit margin, or needs to build additional foot traffic, the retailer may sell a similar or identical product at a lower retail price than its competition.

Product Life-Cycle Stage

In deciding how to price a given product, it important to take into account its stage in the product life cycle — innovation, introduction, growth, maturity, or decline. Product life-cycle stage plays a major role in determining pricing strategy.

New-Product Pricing

Introducing a novel product to market and setting its price poses a challenge. Consumers generally are not familiar with the product and have no reference points for comparison with other similar items. This makes it difficult for consumers to determine the "value" of the merchandise and to form expectations about price. The two major types of new-product pricing are known as "market skimming" and "market penetration."

Market Skimming

Many retailers set the initial price of a new product as high as possible, initially targeting those consumers with the greatest desire for the new product and the resources to pay a premium for it. The company makes fewer sales, but the sales are more profitable. The retailer then lowers the price over time, selling to progressively more price-sensitive consumers. In other words, the retailer "skims" successive segments of consumers off the top of the market.

Market Penetration Pricing

At the other end of the spectrum, a retailer might set a low price for a new product in order to attract as many buyers as possible, thus creating high sales volume and a large market share. Eventually, a consistently high consumer demand for the product will result in decreased wholesale cost. This pricing approach is also known as "everyday low pricing."

Consumer Demand Pricing

This pricing strategy is based on determining the correlation between **consumer demand** and the quantities sold when the product is offered at different retail prices or in different markets. The retailer must determine whether changing a product's retail price significantly affects the quantities sold. Two types of consumer demand pricing are known as "target costing" and "segmented pricing."

Target Costing

Target costing assesses what the customer will pay, or the "wished for" retail price, for a specific product. The product is then developed at a cost that allows the retailer to match the ideal customer price while assuring a profit.

Segmented Pricing

Segmented pricing is the practice of charging different retail prices for the same product (at the same wholesale cost) based on market segment—that is, based on differences between groups of consumers. For example, a retailer may offer senior citizens a discount off selected products on a specific day of the week, while other customers pay the original retail price. Segmentation may also be based on geographic locations or purchase quantities.

Customer Value-Based Pricing

An increasingly popular pricing strategy is based on considering the consumer's perception of a product's value (as discussed in Section 3.1) and the price the consumer assigns to that perceived value. By this strategy, pricing is considered at the initial innovation stages, along with the development and design of the product and creation of the marketing program. The major types of consumer value-based pricing are known as "everyday fair pricing" (or "everyday value pricing") and "value-added pricing."

Everyday Fair Pricing

Everyday fair pricing relies on offering a combination of merchandise quality and services at a price the consumer considers to be fair. This type of pricing often results in retailers' offering new versions or less-expensive designs of previous products, with similar or lower quality and at lower prices. Fewer sales events are held during the selling season, and the marketing strategy relies more on promotion of private-label or store brands with value-added features.

Value-Added Pricing

When value-added features, services, or some type of exclusivity are used to differentiate the retailer's product and service offering, the retailer can demand higher prices. This technique helps position the retailer in the marketplace and to differentiate the retailer from the competition.

The Challenges of Selecting a Pricing Strategy and Type

Selecting a pricing strategy and pricing type is complicated.

The retailer must

- incorporate a mixture of strategies based on merchandise assortments and the competition and
- determine what types of strategies will be the most profitable for the store,
- while meeting the expectations of the target consumer segments.

Pricing strategies and policies must be constantly evaluated. Product pricing drives the store's operations and profit and determines customer satisfaction.

Part 1, Section 3.3
Pricing Policies

Pricing policies, or action plans, must be defined for all pricing strategies and types. Retailers most commonly use the following pricing policies:

- product-line pricing
- zone pricing
- discount pricing
- promotional pricing
- other policies such as psychological, geographical, or international pricing

Product-Line Pricing

Most retailers set prices for specific product classifications across an entire product line. For each product classification, the retailer specifies a "floor" and a "ceiling"—the lowest and highest retail prices. Between the floor and ceiling for each product classification are a range of price points that the retailer may select for the items.

The retail prices across the product are determined by taking into account differences in wholesale cost of the products, in the quality and design features of each item, and in the consumer's perception of the item's value. For example, a retailer pricing a line of cotton sweaters may price a basic cotton turtleneck at the lowest price point (floor), a fashion basic sweater in a cotton blend at a mid-price point, and a high-quality 100% cotton sweater in a trendy or high-fashion design at the highest price point (ceiling).

Good, Better, Best

To describe the product-line pricing policy, a range of price points near the floor usually is designated as "good," with the mid-range price points designated as "better" and the highest range of price points designated as "best." The "good, better, best" terminology explains the correlation between price, quality, and value.

Zone Pricing

Retailers also often use a pricing policy based on the major price zones of the women's apparel market: designer, bridge, contemporary, better, moderate, and budget (or mass market). The price points for each zone are based on the fashion level, design type, construction quality and details, fibers and fabrications, and size availability of the merchandise.

For example, a sundress in the Contemporary department that is designed by a respected designer for a national brand, made of 100% cotton, screen-printed in an exclusive, trendy print, with hand-painted buttons, may sell for $300.00. A knock-off of the same sundress in a cotton/polyester blend without the exclusive print and hand-painted buttons is sold as private-label merchandise in the Better department and retails at $150.00.

Discount Pricing

Discount and mass-merchant retailers most often use discount pricing. In fact, consumers automatically associate these retailers with prices ending in ".99" or ".88"— endings that psychologically denote lower, discounted, or bargain prices. Retailers may also use discount pricing periodically to create high volume and repeat customers. This category of pricing policy includes the one-price-only pricing prevalent in dollar stores, and warehouse clubs often offer products at reduced prices for multiple-units or bundles (such as bundles of 6, 12, or 18 items).

Promotional Pricing

Most types of retailers use promotional pricing, for which there are several different models, including discount pricing, special-event pricing, and limited-time offers.

Discount Pricing

The retailer may establish the initial price of a product (which may be a premium price) and then temporarily reduce or discount the price for a special sale. This discount pricing procedure is used to build store traffic, reduce inventory, or increase sales volume.

Special-Event Pricing and Limited-Time Offers

"Special events" are seasonal sales to build customer traffic. Throughout the selling season, retailers have the opportunity to purchase special cuts, closeouts, or off-price merchandise at low cost. The merchandise is initially priced with the markup on the original wholesale cost, sold at that higher price for a specified period, and then reduced for the special event or sales promotion. Other types of temporary discount pricing includes limited-time offers and online flash sales (lasting a few hours to a few days) that promote impulse buying.

Other Pricing Policies: Psychological, Geographical, International

"Psychological pricing" takes into consideration the consumer's perception of product price and value. If consumers see an unfamiliar new product offered at a high price point, most consumers assume that it is more than likely a higher-quality product, and they will pay a higher price for the item.

"Geographical pricing" takes into account the location, region, or country where the consumer resides and the shipping costs incurred to get the product to that consumer. The product's retail price is based on whether or not the retailer adds additional charges to cover the extra shipping costs. "International pricing" addresses the differences in retail price of the same product in different countries.

The Need To Adjust Retail Prices

Regardless of how sound a retailer's pricing strategies, types, and policies are, external and internal factors constantly affect pricing models, techniques, procedures, and action plans. Retailers must constantly adjust retail prices to meet consumer demand and market conditions.

Part 1, Section 4
Effective Markdown Techniques: Planning Markdowns

Part 1, Section 4.1
Objectives and Types of Markdowns

Merchandise not sold within the appropriate period to meet planned sales goals must be reduced in price. A reduction in the selling price of any merchandise is known as a **markdown**. Markdowns reflect depreciation in the value of the merchandise, for any of a variety of reasons—such as inadequate sales, changing consumer perceptions and demand, obsolescence of seasonal fashion merchandise, soiling and damage, customer returns, weather conditions, and a host of other factors. Markdowns are an integral part of merchandising.

As discussed in Section 2, markdowns are a reduction subtracted from gross sales to determine net sales. Markdowns are calculated as a percentage of net sales and are expressed both in dollars and as a percentage. Some retailers view markdowns as a necessary evil. However, markdowns are a fact of life, and should be used as a merchandising tool.

Markdown Planning

Markdowns are planned as a percentage of each season's sales and are allocated to specific months when it is estimated that merchandise must be marked down in order to be sold. The planned extent of markdowns is not a goal, but a guide.

Astute retailers strive to use markdowns as a means to increase profit or ensure cash flow. Retailers must establish a markdown policy and action plan, and constantly monitor markdowns to ensure that they do not significantly exceed the planned amount.

Markdowns are necessary for the following reasons:

- To correct buyer errors in the selection of merchandise.
- As a management operational device to move slow-selling inventory or increase turnover (the number of times the average inventory on hand is sold and replaced during a given time period).
- As a merchandising device to promote sales.

Errors in Buying

The buying process is both a science and an art, and relies in part on the buyer's intuition. Retail buyers must purchase merchandise six to twelve months before it is delivered to the store for the peak selling season, resulting in a risk that consumers have since moved on to newer, trendier merchandise. It is challenging to select the right merchandise at the right cost and to have it in stock in the right quantities, in the right place, and at the right time to meet consumer expectations and demand. Although technology aids the buyer in planning purchases, consumers are fickle, changing their buying patterns or seeking fresh, innovative products instead of the retailer's carefully planned merchandise mix.

Some buyer errors result from misjudging the market's economic condition and therefore planning unrealistic sales goals. In other cases, market conditions may change so quickly that the buyer cannot react in time to adjust to changing consumer demand.

Buyer errors also occur when a buyer misunderstands the desires of the store's clientele or does not closely monitor customers' fashion preferences, and selects merchandise that fails to sell because it does not meet customer expectations. In some cases, buyers may be guided by their own preferences instead of customers' desires.

These additional types of buyer errors also contribute to the need for markdowns:

- Untimely deliveries.
- Ordering merchandise in the wrong size range, color, or style for the customer base.
- Not merchandising and promoting key product classifications.

Markdowns To Correct Buyer Errors

The objective of markdowns to correct buyer errors is usually to produce cash flow and move overstocked merchandise in order to replace the unwanted product with fresh, trendy merchandise.

Management Operational Devices

Management often reduces retail prices in order to build store traffic or to match the competition's prices. In fact, some retailers consistently run end-of-the-month sales and even purchase additional promotional goods for these sales. This technique is often used to increase the store's sales volume. These reductions are recorded as markdowns and are an essential aspect of doing business.

Even when a merchandise classification sells quickly, leftover product will remain. For example, some sizes, styles, or colors might not sell as quickly as others during the peak selling season. The leftover merchandise is labeled as "odd lots" and "broken sizes." The presence of odd lots and broken sizes can hinder the sale of other merchandise, and they must be marked down to make space for more desirable goods. Also, items that become soiled, damaged, or shopworn during the selling season must be marked down to reflect their reduced value and to attract customer attention.

Merchandising Devices

As discussed in Section 3.3, many retailers purchase merchandise, offer it initially at a premium price, and then reduce the price for special events and sales promotions. Retailers usually identify and record promotional markdowns separately from those taken as a managerial operational device or to correct buyer errors.

Part 1, Section 4.2
Markdown Policies

Retailers must plan the types and amounts of markdowns that will be needed to meet sales targets and profit goals. The plan must include policies or procedures for taking markdowns on a timely basis and though an organized process, to ensure consistency in markdown procedures and accuracy in record-keeping. Procedures are needed for all aspects of implementing markdowns:

- timing
- amount
- recording
- data analysis
- the impact of analysis findings on future store operations

Traditional Markdown Principles

Retailers traditionally have based their markdown policies on the following principles:

- The time during the selling season at which a product is reduced depends on the type of product. For example, markdowns on fashion merchandise cannot be postponed until the end of the selling season—trendy merchandise, unlike fine wine, does not improve with age!
- The timing of markdowns depends on the type of store.
- The first markdown must be taken early enough to allow time for additional markdowns later in the season.
- The size of the markdown is based on the original retail price and the timing of the reduction. Retailers must be careful not to reduce too deeply too soon.
- However, markdowns will be least costly to the retailer if the first markdown is deep enough to immediately attract the target consumer.
- Markdowns should be taken in incremental dollar amounts. Markdowns off the original retail price usually follow this sequence: one-quarter off (25%), one-third off (33.3%), and finally half off (50%).

How Deep a Markdown To Take?

Ask the question, "What will the customer pay for the product at this time in the selling season?"

Housing of Marked-Down Merchandise

The sales of marked-down merchandise are also influenced by how the retailer houses the merchandise. Marked-down merchandise should be organized, merchandised, and promoted like any other merchandise, but should be separated from regular-price merchandise. Retailers should employ clear signage designating the type of markdown as a silent selling tool.

Part 1, Section 4.3
Minimizing Markdowns

Plans for markdowns are a guide, not a goal. The astute retailer attempts to avoid taking unnecessary or excessive markdowns during any given selling season. Minimizing the markdowns taken at any given time requires research and constant vigilance. The following techniques can be used to minimize markdowns by minimizing the factors that make markdowns necessary.

Analysis of Consumer Demand

The retailer must identify the store's target consumer segments and determine what products these customers demand. Besides analyzing previous markdowns and sales records, merchandisers must communicate with consumers, read trade publications, listen to sales specialists—who are the store's "face" to the customer—and conduct consumer research. This enables the retailer to select the "right merchandise" for its target consumer segments.

Inspection of New Merchandise

Inspecting new merchandise as soon as it is delivered to the store enables the retailer to identify poor-quality items and return them to the manufacturer, instead of marking them down later. The buyer should also be notified immediately of any shipment inaccuracies, such as incorrect sizes, colors, or styles, so that these incorrectly shipped items can be returned to the vendor.

Housekeeping and Display

Good housekeeping procedures will help keep the stock clean and in saleable condition. Furthermore, well-planned merchandise arrangements and display of slow-selling goods will promote the goods at regular price, reducing the need for markdowns.

Record-Keeping and Reordering

Keeping accurate records and analyzing sales help the buyer to pinpoint problems with specific product classifications. Timely reorders may prevent stockouts and reduce the occurrence of odd lots and broken sizes. Developing key vendors enables the buyer to make special purchases and buy closeouts that may be mixed with regular-price goods for a higher markup and increased store traffic.

Effective Use of Markdowns as a Merchandising Tool

Careful planning of reductions for speciific product classifications and of the timing of markdowns, combined with consistent monitoring of sales, will ensure that markdowns are not unnecessary or excessive, but accurately reflect the saleable value of the product.

Part 1, Section 4.4
Calculating Markdowns

As downward adjustments in retail selling price, markdowns greatly impact inventory levels, sales volume, and profit. In order to meet sales plans and realize adequate profit, retailers must monitor markdowns closely and calculate them accurately. In fact, inaccurate calculations of markdowns can actually cause inventory shrinkage. It is essential that the statistical data accurately reflect the store's day-to-day operations.

Consumers' vs. Retailers' Views of Markdowns

Consumers think of reduced prices or markdowns as a percentage off of the original, or regular, retail price of the merchandise, whereas retailers view markdowns as a downward adjustment in the dollar amount of retail price and inventory.

As discussed in Section 4.2, retailers must decide on the amount or percentage of reduction in price and take the markdown in a timely manner in order to meet consumers' expectations about the product's value. It is customary to begin with a 20% to 25% markdown and sell as much merchandise as possible at that reduced price. The goods not selling are then reduced to one-third off and then to half off or more.

The following formulas are used to calculate markdown dollars and percentages.

Markdown price:

Markdown $ = Original Retail Price $ × Reduction %

New Retail Price $ = Original Retail Price $ – Markdown $

Markdown in dollars:

Markdown $ = Current Retail $ – New Retail Price $

Total Markdown $ = (Current Retail $ – New Retail Price $) × Number of Markdown Units

Markdown percentage:

Net Sales $ = New Retail Price $ × Number of Units Sold

Markdown % = Markdown $ ÷ Net Sales $

Example: Calculating Markdowns

The merchandise manager of a store requested that the buyer prepare for a weekend special promotional sale. After looking at sales figures and product classifications, the buyer decided to run a 25%-off sale on some trendy cotton blouses and cotton-blend shirts. The buyer submitted the following plan to the merchandise manager:

- Advertise a 25%-off weekend sale on a select group of trendy cotton-blend shirts and cotton blouses.
- Reduce 24 cotton blouses originally priced at $56.00 and 18 cotton-blend shirts originally priced at $48.00 for the 25%-off sale.
- After the weekend sale, reduce any remaining blouses and shirts to one-third off.

The retail sales promotion was successful:

- The buyer sold 18 of the 24 blouses at 25% off the retail price, for $42.00 each, and 10 of the 18 shirts at 25% off the retail price, for $36.00 each.
- All of the remaining blouses and shirts sold at a second reduction of one-third off.

The Time Period for Calculation of Markdowns

Markdown percentage is usually calculated over a given period of time and for a department or store, rather than for one group of items, and is based on net sales for that time period. However, this example uses a grouping of items.

Use the formulas on the previous page to calculate the markdown in dollars and the new retail price, the total markdown dollars, and the markdown percentage.

1. Calculate the Markdown and New Retail Price

Markdown $ = Original Retail Price $ × Reduction %

Blouses: Markdown $ = $56.00 × 25%
= $14.00

Shirts: Markdown $ = $48.00 × 25%
= $12.00

New Retail Price $ = Original Retail Price $ – Markdown $

Blouses: New Retail Price $ = $56.00 – $14.00
= $42.00

Shirts: New Retail Price $ = $48.00 – $12.00
= $36.00

2. Calculate the Total Markdown Dollars

Total Markdown $ = Original Retail Price $ – New Retail Price $
× Number of Markdown Units

Blouses: Total Markdown $ = ($56.00 – $42.00) × 24
= $14.00 × 24
= $336.00

Shirts: Total Markdown $ = ($48.00 – $36.00) × 18
= $12.00 × 18
= $216.00

Total Markdown $ = $336.00 + $216.00
= $552.00

At the 25%-off price, the buyer sold 18 of the reduced blouses at $42.00 and 10 of the reduced shirts at $36.00. First, the buyer must determine how many blouses and shirts are left to be reduced to one-third off:

Blouses: 24 – 18 sold at 25% off = 6 remaining to be sold

Shirts: 18 – 10 sold at 25% off = 8 remaining to be sold

Next, the buyer must determine the new retail price at one-third off and the total markdown dollars accumulated at the new retail price, by repeating Steps 1 and 2.

1. Calculate the Markdown Price and New Retail Price for the Remaining Merchandise

Markdown $ = Original Retail Price $ × Reduction %

Blouses: Markdown $ = $56.00 × 33.33%
= $18.67

Shirts: Markdown $ = $48.00 × 33.33%
= $16.00

New Retail Price $ = Original Retail Price $ – Markdown $

Blouses: New Retail Price $ = $56.00 – $18.67
= $37.33

Shirts: New Retail Price $ = $48.00 – $16.00
= $32.00

Keep in mind that the markdown dollars on the merchandise have already been recorded for the markdown from the original price to 25% off. Therefore, **only the difference between 25% off and one-third off needs to be calculated and recorded.**

2. Calculate the Total Markdown Dollars for the Second Markdown

Total Markdown $ = Current Retail Price $ – New Retail Price $
× Number of Markdown Units

Blouses: Total Markdown $ = ($42.00 – $37.33) × 6
= $4.67 × 6
= $28.02

Shirts: Total Markdown $ = ($36.00 – $32.00) × 8
= $4.00 × 8
= $32.00

Total Markdown $ = $28.02 + $32.00
= $60.02

The final step is to calculate the overall markdown percentage. First, calculate the net sales in dollars for the blouses and shirts sold at both markdowns (25% and 33.33%).

3A. Calculate the Net Sales in Dollars at Both Markdowns

Net Sales $ = Retail Price $ × Number of Units Sold

Sales at 25% Off:

Blouses (25% Off): Net Sales $ = $42.00 × 18
= $756.00

Shirts (25% Off): Net Sales $ = $36.00 × 10
= $360.00

Net Sales $ **= $1,116.00**

Sales at One-Third Off:

Blouses (33.33% Off): Net Sales $ = $37.33 × 6
= $223.98

Shirts (33.33% Off): Net Sales $ = $32.00 × 8
= $256.00

Net Sales $ **= $479.98**

Overall Net Sales = Net Sales $ at 25% Off + Net Sales $ at 33.33% Off
= $1,1116.00 + $479.98
= $1,595.98

Then use the total markdown in dollars and the net sales figures to calculate the total markdown percentage.

3B. Calculate Total Markdown Percentage

Total Markdown $ = Total Markdown $ for Blouses + Total Markdown $ for Shirts
= ($336.00 + $28.02) + ($216.00 + $32.00)
= $612.12

Markdown % = Markdown $ ÷ Net Sales $
= $612.02 ÷ $1,595.98
= 38.35%

Again, keep in mind that the markdown percentage is usually calculated over a given period of time for a department or store, rather than on one group of items, and is based on net sales for that time period.

Key Points About Markdowns

- Planned markdowns are a guide, not a goal.
- Markdowns are based on the price adjustment needed to sell the merchandise in order to meet planned sales goals while making a profit.
- Astute retailers establish markdown polices that minimize markdowns.
- Recording and accurate calculation of markdowns are essential, as markdowns impact net sales and the bottom line.

Part 1
Review Problems

Using the appropriate formulas, calculate the answers to the following problems, and select the correct answers from the available choices. The answer key may be found on page 166.

1. What retail price on a cotton swimsuit cover-up costing $40.00 is needed for the buyer to achieve a 60.0% markup?

    a. $80.00
    b. $100.00
    c. $120.00
    d. $88.00

2. What is the cost of cotton-blend cropped pants that retail for $88.00 and have a 52.50% markup?

    a. $41.80
    b. $45.00
    c. $40.50
    d. $46.20

3. Calculate the markup percentage on cotton shorts that cost $25.00 and retail for $52.00.

    a. 50.00%
    b. 59.20%
    c. 51.92%
    d. 108.00%

4. For a special weekend Summer Sale, the buyer for the Junior Sportswear Department purchased 48 basic cotton T-shirts at a cost of $10.00 each, 60 cotton-blend tank tops at a cost of $5.00 each, and 36 novelty-print tops of 100% Pima cotton at a cost of $14.00 each. In order to establish the original retail price, she has decided to use a keystone markup + $4.00 and then reduce the items later for the weekend sale. What is the initial markup percentage?

    a. 58.20%
    b. 59.16%
    c. 100.00%
    d. 144.86%

5. A buyer for the Misses Sportswear Department needs to purchase $10,000 at retail of cotton or cotton-blend shorts for the summer selling season. She has already purchased 10 dozen 100% cotton woven Bermuda shorts from her national-brand vendors and 6 dozen cotton-blend knit shorts from one of her private-label manufacturers. She paid $20.00 each for the Bermuda shorts, which will retail for $44.00, and $8.00 each for the knit shorts, which will retail at $22.00. The buyer needs a 54% markup on the shorts. What markup percentage is needed on the balance of merchandise to be purchased?

    a. 93.10%
    b. 100.00%
    c. 51.79%
    d. 48.21%

6. A buyer for a Contemporary Sportswear Department plans to purchase 120 pairs of cotton woven and cotton knit cropped pants to retail at $54.99 each for a Spring Sale. She has already purchased 72 pairs of the pants a cost of $30.00 each. What is the highest cost the buyer can pay for the remainder of the pants if she needs to achieve a 52% markup?

    a. $20.99
    b. $23.00
    c. $21.99
    d. $24.00

7. A menswear buyer in the Contemporary Sportswear Department needs to purchase khaki pants for a Fall Sale. He bought 4 dozen 100% cotton khaki pants at a cost of $32.00 each, 2 dozen cotton-blend khaki pants at $28.00 each, and a select group of 2 dozen trendy cotton khaki pants at $34.00 each. He wants to offer all of the pants at the same retail price. What unit retail price does this buyer need to achieve a 45% markup?

    a. $55.00
    b. $60.00
    c. $57.27
    d. $58.99

8. A buyer has an opening inventory of $88,000 at cost with a markup of 46%. The buyer will be purchasing goods throughout the season for special sales, events, and promotions. She plans to purchase an additional $40,000 at retail and to establish a 52% markup on the purchases. What is the cumulative markup percent on this inventory?

    a. 49.00%
    b. 48.17%
    c. 50.00%
    d. 47.18%

9. Using the figures in the table below, calculate the initial markup percentage for the private-label merchandise purchased by the buyer in the Misses Sportswear Department.

    a. 52.00%
    b. 58.66%
    c. 38.45%
    d. 40.66%

10. Using the figures in the table below, calculate the maintained markup percentage for that same Misses Sportswear Department.

    a. 52.00%
    b. 50.00%
    c. 58.66%
    d. 38.45%

Figures for Calculating the Answers to Questions 9 and 10

Gross Sales	$435,400
Net Sales	$400,000
Operating Expenses	$180,000
Operating Profit	$32,000
Employee Discounts	$3,800
Shrinkage	$3,600
Returns & Allowances	$4,000
Markdowns	$24,000
Cash Discounts	$8,000
Transportation	$12,000
Alterations	$4,000
Invoiced Cost of Goods	$180,000

Part 2

Manipulating Profit Variables: Merchandising for a Profit

Part 2, Section 1
Basic Components of the Profit & Loss Statement

Part 1 of this course explored the importance of retail pricing, to illustrate how the three pricing components—retail price, wholesale cost, and markup—affect the profitability of a successful retail store operation. Part 2 examines another financial planning and analysis tool for the retailer—the profit and loss statement (P&L statement).

The Profit & Loss Statement

The P&L statement provides a picture of the store's (or department's) earnings, costs, and expenses over a specific period (i.e., month, quarter, six months, or year). As the name indicates, the P&L statement can indicate either a profit or a loss for the period. The P&L statement sometimes goes by other names. To avoid the negative connotations of the word "loss," many retailers prefer to call it the "income statement," emphasizing the store's profitability. Others call it an "operating statement," emphasizing the relationship of operating expenses to net sales and profit.

Regardless of what the statement is called, the retailer develops a P&L statement for the coming year, which reflects plans based on analysis of the previous year's statement. Then, during the course of the year, the retailer can compare the actual financial happenings (as shown in monthly, quarterly, and semiannual P&L statements) against the planned P&L statement figures. This comparison assists the retailer in making critical business decisions that affect day-to-day operations.

Analyzing percentages gives the retailer a tool for making comparisons across departments, divisions, and stores. The figures on the P&L statement are reported in both dollars and percentages, following the same format as for the retail price components.

Using Profit & Loss Statements for Comparisons

P&L statements may be created for departments, divisions, individual stores, or a group of stores. The retailer can analyze the P&L statement for each department, division, or store in order to determine the most and least profitable departments, divisions, or stores within a group of stores. This analysis provides the retailer with insight, for example, on problematic divisions or on store locations that are not meeting performance goals.

The Skeletal Profit & Loss Statement

The skeletal P&L statement includes only the major profit components and relates the components to show how they affect profit. It is discussed in detail in Part 2, Section 2. The expanded P&L statement fills in the details that make up each component; it is discussed in Part 2, Section 3.

The Components of the Skeletal P&L Statement

The skeletal P&L statement has five components:

1. net sales
2. cost of goods sold
3. gross margin
4. operating expenses
5. operating profit

Net Sales

Net sales (discussed in more detail in Part 2, Section 2.1) is the first component of the P&L statement, and **all other components of the statement are compared as percentages of a store's net sales.** Net sales equals gross sales minus customer returns and allowances. Net sales are also known as "sales volume" or "operating income." The volume of net sales ultimately dictates all store operations.

Gross Sales

Gross sales are not shown on the skeletal P&M statement, but are used to calculate net sales, the first component of the statement. Gross sales equal the total retail prices charged to customers (whether cash or credit) for all merchandise before any retail reductions.

Cost of Goods Sold

The cost of goods sold (also called the "total cost of goods sold") equals the gross wholesale cost of the goods (including transportation costs and after trade and quantity discounts are deducted) plus the cost of alterations (if applicable), less cash discounts. The subcomponents of the cost of goods sold may be manipulated in order to control the cost of merchandise, and are broken out in the expanded P&L statement (as discussed in Part 2, Section 2.2).

Gross Margin

The gross margin is the dollar or percentage difference between net sales and the cost of goods sold. Thus, along with net sales, manipulation of the subcomponents of the cost of goods sold will impact the gross margin.

Operating Profit

Operating profit is the money remaining after operating expenses (direct and indirect expenses, discussed in Part 2, Section 2.4) have been subtracted from the gross margin. The bottom line of the skeletal P&L statement alerts the retailer to profit made or loss incurred. Throughout the retail year, the retailer must carefully monitor and evaluate gross margin and net operating profit in order to make adjustments in sales volume and/or the cost of goods sold. The retailer may need to adjust operating expenses in order to reach planned performance goals.

Operating Profit vs. Net Profit

In this course, **operating profit** is defined as the profit before taxes are paid, or the difference between gross margin and total operating expenses, and **net profit** is defined as profit after taxes. Operating profit is also known as "net operating profit" or "profit before taxes," and net profit is also known as "profit after taxes."

Part 2, Section 2
Skeletal Profit & Loss Statement: Calculating the P&L Components

Part 2, Section 2.1
Net Sales

As discussed in Part 2, Section 1, gross sales and the calculation of net sales are not shown in the skeletal P&L statement. Therefore, the skeletal P&L statement begins by "invisibly" subtracting customer returns and allowances from gross sales, to yield net sales:

Net Sales $ = Gross Sales $ – (Customer Returns & Allowances $)

The significance of gross sales as an integral entry on the expanded P&L statement is discussed in Part 2, Section 3.1.

The net sales figure is the first entry on the skeletal P&L statement and is the basis for calculating the rest of the figures on the statement. High net sales indicate that the retailer has the "right merchandise" in the "right quantities, styles, colors, and sizes," at the "right price," in the "right place," and at the "right time" for the store's target consumers.

The Significance of Net Sales

Net sales are a measure of whether the retail buyer knows the store's target consumers; understands their needs, wants, and demands; and knows what fashion level, quality, and price range of merchandise to purchase in order to build a loyal customer following, who make repeat purchases.

The examples in Section 2 use the following dollar figures in all calculations:

Gross Sales	**210,000**	**Customer Returns & Allowances**	**10,000**
Net Sales	**200,000**	**Cost of Goods Sold**	**116,000**
Gross Margin	**84,000**	**Operating Expenses**	**72,000**
Operating Profit	**12,000**		

Manipulating the Net Sales Formula

Use the figures above to calculate net sales in dollars from gross sales and customer returns and allowances.

Calculate Net Sales in Dollars from Gross Sales

Net Sales $ = Gross Sales $ – Customer Returns & Allowances $

= $210,000 – $10,000

= $200,000

Net sales calculations can be compared to the retail price component calculations explained in Part 1, Section 2.1. The basic retail price components are retail dollars, cost dollars, and markup dollars, and the first three skeletal P&L statement components are net sales dollars, cost of goods sold dollars, and gross margin dollars.

Just as with the retail price components, if two of the first three components of the skeletal P&L statement are known, the other component may be calculated by manipulating the net sales formula:

Net Sales $ = Cost of Goods Sold $ + Gross Margin $

Calculate Net Sales in Dollars from Gross Margin

Net Sales $ = Cost of Goods Sold $ + Gross Margin $

= $116,000 + $84,000

= $200,000

Calculate Cost of Goods Sold in Dollars

Cost of Goods Sold $ = Net Sales $ – Gross Margin $

= $200,000 – $84,000

= $116,000

Calculate Gross Margin in Dollars

Gross Margin $ = Net Sales $ – Cost of Goods Sold $

= $200,000 – $116,000

= $84,000

Calculate P&L Components as Percentages

Although many manufacturers and a few retailers use cost instead of net sales as a basis for calculating the P&L statement components, this course uses net sales. Net sales consist of the total retail price of goods that the consumers purchase; just as retail price always equals 100% in calculating retail price components, **net sales always equals 100% on the skeletal P&L statement:**

Net Sales % = Cost of Goods Sold % + Gross Margin %

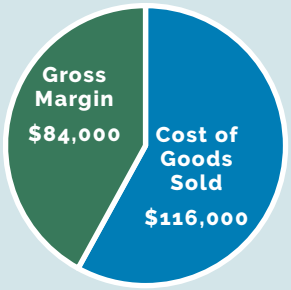
where net sales % = 100%.

Net Sales Always = 100%

Net Sales = $200,000

Cost of Goods Sold = $116,000

Gross Margin = $84,000



The percentages for gross margin and cost of goods sold also may be calculated by substituting percentages for dollar amounts:

Cost of Goods Sold % = Net Sales % – Gross Margin %

Gross Margin % = Net Sales % – Cost of Goods Sold %

All skeletal P&L statement components can be calculated as percentages of net sales, using the following formula:

Component % = Component $ ÷ Net Sales $

Note that although gross margin plus cost of goods sold add up to 100%, operating expenses and net operating profit are not part of this total. However, it is useful to express them as a percentage of net sales. (These skeletal P&L components are discussed in more detail in Part 2, Sections 2.2 and 2.3.)

Calculate Gross Margin as a Percentage

Gross Margin % = Gross Margin $ ÷ Net Sales $
= $84,000 ÷ $200,000
= 42%

Review Example

Calculate the missing components of the following skeletal P&L statement, using the dollar amounts provided on the previous page:

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	?%
= Gross Margin	84,000	42%
– Operating Expenses	72,000	?%
= Operating Profit	**$?**	?%

Calculate Cost of Goods Sold as a Percentage

Cost of Goods Sold % = Net Sales % – Gross Margin %
= 100% – 42%
= 58%

Calculate Operating Expenses as a Percentage

Operating Expenses % = Operating Expenses $ ÷ Net Sales $
= $72,000 ÷ $200,000
= 36%

Calculate Operating Profit in Dollars

Operating Profit $ = Gross Margin $ – Operating Expenses $
= $84,000 – $72,000
= $12,000

Calculate Net Operating Profit as a Percentage

Operating Profit % = Operating Profit $ ÷ Net Sales $
= $12,000 ÷ $200,000
= 6%

The missing components of the skeletal P&L statement can now be filled in:

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	**58%**
= Gross Margin	84,000	42%
– Operating Expenses	72,000	**36%**
= Operating Profit	**12,000**	**6%**

Calculating Net Sales, Gross Margin, and Cost of Goods Sold

If the values of any two of these P&L components are known, the value of the unknown third component can be calculated, either in dollars or as a percentage. These calculations are similar to those used to solve for an unknown component in the retail price formula (retail price, wholesale cost, and markup).

Part 2, Section 2.2
Cost of Goods Sold

The **total cost of goods sold** has the following subcomponents:

- the vendor's list price (before transportation costs or vendor discounts)
- trade or quantity discounts
- transportation costs (including insurance where applicable)
- alterations (where applicable)
- cash discounts

As previously discussed, the following formulas are used to calculate the cost of goods sold in dollars and as a percentage:

Cost of Goods Sold $ = Net Sales $ – Gross Margin $

Cost of Goods Sold % = Cost of Goods Sold $ ÷ Net Sales $

Cost of Goods Sold % = Net Sales % – Gross Margin %

The Importance of the Cost of Goods Sold

The cost of goods sold greatly affects the gross margin, and ultimately the retailer's bottom line. Retailers must constantly monitor and evaluate the cost of goods throughout the retail year, to ensure that the cost is manageable. Astute retailers negotiate the best wholesale prices for merchandise and are vigilant about shipping costs. They often reward the retail buyer for obtaining the best available discounts and terms on the goods purchased.

Calculate the Cost of Goods Sold

Use the dollar amounts in the table below to calculate the cost of goods sold in dollars and as a percentage.

Gross Sales	**210,000**	**Customer Returns & Allowances**	**10,000**
Net Sales	**200,000**	**Cost of Goods Sold**	**116,000**
Gross Margin	**84,000**	**Operating Expenses**	**72,000**
Operating Profit	**12,000**		

Calculate Cost of Goods Sold in Dollars

Cost of Goods Sold $ = Net Sales $ – Gross Margin $
= $200,000 – $84,000
= $116,000

Calculate Cost of Goods Sold as a Percentage

Cost of Goods Sold % = Cost of Goods Sold $ ÷ Net Sales $
= $116,000 ÷ $200,000
= 58%

Alternatively, the cost of goods sold as a percentage can be calculated from the percentages for net sales and gross margin, if the gross margin percentage is known.

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	**?%**
= Gross Margin	84,000	42%

Calculate Cost of Goods Sold as a Percentage

Cost of Goods Sold % = Net Sales % – Gross Margin %
= 100% – 42%
= 58%

Part 2, Section 2.3
Gross Margin

As previously discussed, the gross margin is the **difference between net sales and the total cost of goods sold.** It is based on the maintained markup and the net sales in dollars.

The Importance of the Gross Margin

The dollar amount of the gross margin must be large enough to cover both operating expenses and operating profit — otherwise, the store will incur a loss. If the gross margin is less than the operating expenses, the retailer is "in the red" and has a loss. On the P&L statement, a loss is shown in parentheses, as both a dollar amount and a percentage. If the gross margin exceeds the operating expenses, the retailer is "in the black," and has realized a net operating profit.

Net operating profit is the result of subtracting the total operating expenses from the gross margin. Operating expenses are discussed in more detail in Part 2, Section 2.4, and gross margin is discussed in more detail in Part 2, Section 3.5.

The following formulas are used to calculate the the gross margin in dollars and as a percentage:

Gross Margin $ = Operating Expenses $ + Operating Profit $

Gross Margin % = Gross Margin $ ÷ Net Sales $

Of course, the gross margin must cover operating expenses and profit, or the P&L statement will show a loss.

Calculate the Gross Margin

Use the dollar amounts in the table below to calculate the gross margin in dollars and as a percentage.

Gross Sales	**210,000**	**Customer Returns & Allowances**	**10,000**
Net Sales	**200,000**	**Cost of Goods Sold**	**116,000**
Gross Margin	**84,000**	**Operating Expenses**	**72,000**
Operating Profit	**12,000**		

Calculate Gross Margin in Dollars

Gross Margin $ = Operating Expenses $ + Net Operating Profit $
= $72,000 + $12,000
= $84,000

Calculate Gross Margin as a Percentage

Gross Margin % = Gross Margin $ ÷ Net Sales $
= $84,000 ÷ $200,000
= 42%

Alternatively, the gross margin as a percentage can be calculated from the percentages for net sales and cost of goods sold, if the cost of goods sold percentage is known:

Gross Margin % = Net Sales % – Cost of Goods %

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	58%
= Gross Margin	84,000	**?%**

Calculate Cost of Goods Sold as a Percentage

Gross Margin % = Net Sales % – Cost of Goods Sold %
= 100% – 58%
= 42%

Maintaining a gross margin adequate to cover operating expenses and profit is imperative to a sound retail operation, and both the cost of goods sold and net sales volume significantly affect the gross margin in dollars. However, the retailer often does not have control over all of the subcomponents of the cost of goods sold, or over the net sales volume, which may be significantly affected by the state of the economy or by consumer spending patterns. The amount of gross margin also varies by the type of the retail store and the type and pricing of merchandise.

Part 2, Section 2.4
Operating Expenses

Operating expenses are the expenses incurred in order to operate a business, not including the cost of goods sold. All retail operations, whether brick-and-mortar, online, or in another format, incur costs while providing goods and services for the target consumer. Some types of expenses can be controlled or reduced by the retailer, whereas others are non-negotiable. Retailers identify all of these costs as operating expenses, also known as "overhead." The following are typical examples of operating expenses for retailers:

- management salaries and employee wages
- rent, building insurance and maintenance, and utilities
- selling supplies and receiving and marking room costs
- advertising and travel expenses
- interest on debt and depreciation on fixtures

The retailer must monitor many different categories of expenses. Several methods exist for classifying expenses, based on the purpose of the analysis. Traditionally, operating expenses have been categorized as **direct** or **indirect.** The more complicated organizational structures of modern-day stores and store groups have given rise to more elaborate classification methods, which vary among retailers, but with which this course is not concerned.

Categories of Operating Expenses

Operating expenses are categorized as **direct** or **indirect.** Operating expenses are discussed in more detail in Part 2, Section 3.4. On the skeletal P&L statement, operating expenses are a one-line entry, which is the total of all operating expenses.

On the skeletal P&L statement, the relationship among the last three components (gross margin, operating expenses, and operating profit) is similar to the relationship among the first three components (net sales, cost of goods sold, and gross margin), in that any one of the three components can be calculated from the other two.

The operating expenses formula can be constructed by manipulating the gross margin formula:

Operating Expenses $ = Gross Margin $ – Operating Profit $

Operating Expenses % = Operating Expenses $ ÷ Net Sales $

Calculate Operating Expenses

Use the dollar amounts in the following table to calculate the operating expenses in dollars and as a percentage.

Gross Sales	**210,000**	**Customer Returns & Allowances**	**10,000**
Net Sales	**200,000**	**Cost of Goods Sold**	**116,000**
Gross Margin	**84,000**	**Operating Expenses**	**72,000**
Operating Profit	**12,000**		

Calculate Operating Expenses in Dollars

Operating Expenses $ = Gross Margin $ – Operating Profit $
= $84,000 – $12,000
= $72,000

Calculate Operating Expenses as a Percentage

Operating Expenses % = Operating Expenses $ ÷ Net Sales $
= $72,000 ÷ $200,000
= 36%

Alternatively, operating expenses as a percentage can be calculated from the percentages for gross margin and net operating profit, if the net operating profit percentage is known:

Operating Expenses % = Gross Margin % – Net Operating Profit %

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	58%
= Gross Margin	84,000	42%
– Operating Expenses	72,000	**?%**
= Operating Profit	12,000	6%

Calculate Operating Expenses as a Percentage

Operating Expenses % = Gross Margin % – Operating Profit %
= 42% – 6%
= 36%

Retailers must carefully and consistently monitor and control operating expenses, to ensure that they are less than the gross margin, in order to realize a profit. Expenses can change as the result of many factors—even a change in weather. Therefore, the astute retailer negotiates the costs of as many expenses as possible.

Part 2, Section 2.5
Operating Profit

The final calculation in the skeletal P&L statement components is operating profit—the difference between gross margin and operating expenses, also known as "net operating profit" or "profit before taxes." In order for the retailer to operate a successful business, the gross margin must cover both operating expenses and profit. If the operating expenses are larger than the gross margin, the retailer does not make a profit. Some retailers refer to operating profit as "net income" or "net earnings."

The following formulas are used to calculate operating profit dollars and percent:

Operating Profit $ = Gross Margin $ – Operating Expenses $

Operating Profit % = Operating Profit $ ÷ Net Sales $

Operating Profit % = Gross Margin % – Operating Expenses %

Calculate Operating Profit

Use the dollar amounts in the table below to calculate the operating profit in dollars and as a percentage.

Gross Sales	**210,000**	**Customer Returns & Allowances**	**10,000**
Net Sales	**200,000**	**Cost of Goods Sold**	**116,000**
Gross Margin	**84,000**	**Operating Expenses**	**72,000**
Operating Profit	**12,000**		

Calculate Operating Profit in Dollars

Operating Profit $ = Gross Margin $ – Operating Expenses $
= $84,000 – $72,000
= $12,000

Calculate Operating Profit as a Percentage

Operating Profit % = Operating Profit $ ÷ Net Sales $
= $12,000 ÷ $200,000
= 6%

Alternatively, operating expenses as a percentage can be calculated from the percentages for gross margin and operating profit, if the operating profit percentage is known:

Operating Profit % = Gross Margin % – Operating Expenses %

Component	Dollars	Percentage
Net Sales	200,000	100%
– Cost of Goods Sold	116,000	58%
= Gross Margin	84,000	42%
– Operating Expenses	72,000	36%
= Operating Profit	12,000	**?%**

Calculate Operating Profit as a Percentage

Operating Profit % = Gross Margin % – Operating Expenses %
= 42% – 36%
= 6%

Other Income

Some retailers lease floor space or departments in their stores to other retailers who sell merchandise that complements their stores' merchandise mix. The rent for leasing this space is considered "other income." Also, some retailers receive interest on their investments or income from other sources that must be accounted for on the P&L statement. Other income and other expenses not directly related to operating the business must be include on the statement, posted after operating expenses.

In cases where other income is received, the following formulas are used to calculate profit before and after income taxes:

Net Profit Before Taxes $ = Operating Profit $ + Other Income $ – Other Expenses $

Net Profit After Taxes $ = Net Profit Before Taxes $ – Income Taxes $

Each retail organization has its own accounting procedures and handles other income, other expenses, and tax allocations according to predetermined business decisions. These aspects of the P&L statement are not discussed further in this course.

The Importance of Profit

It is critical that a retailer make a profit, since profit allows for replenishment of inventory, replacement of equipment, renovation of stores or opening of additional stores, investment of monies realized from profit, and return on investments to the shareholders.

Part 2, Section 2.6
Interrelationships Among Components

It should be evident from the previous discussion that all of the components of the skeletal P&L statement are interrelated. Net sales encompass the cost of goods sold and the gross margin, while operating expenses and operating profit are subcomponents of the gross margin.

Monitoring the Skeletal P&L Components

If one component changes, either upward or downward, other components also will change. For example, if net sales decrease and cost of goods sold increases, the gross margin will decrease. Similarly, increased operating expenses could result in a loss on the bottom line, rather than the expected profit. The retailer must evaluate and monitor the P&L components in order to ensure that the store is profitable.

As with the retail price components, all of the P&L components are expressed both in dollars and as percentages. In order to construct the skeletal P&L statement, the retailer usually must work with a combination of dollars and percentages to calculate the unknown quantities. Because net sales always equal 100%, net sales are the base for the calculations, and all of the other components are a ratio or percent of net sales.

Calculating Dollar Values of Skeletal P&L Components

When net sales dollars are known and any other component percentage is known, use the following formula to calculate the dollar amount of that component:

Cost of Goods Sold $ = Net Sales $ × Cost of Goods Sold %

Gross Margin $ = Net Sales $ × Gross Margin %

Operating Expenses $ = Net Sales $ × Operating Expenses %

Operating Profit $ = Net Sales $ × Operating Profit %

Example

Using the same example figures as in Sections 2.1 through 2.5, net sales are $200,000, and the operating profit percentage is 6%:

Calculate Operating Profit in Dollars

Operating Profit $ = Net Sales $ × Operating Profit %

= $200,000 × 6%

= $12,000

Calulating Net Sales in Dollars

On the other hand, the retailer might need to determine the net sales value needed in order to meet planned margin goals. If both the dollar amount and percentage of any skeletal P&L statement component are known, net sales can be calculated. Specifically, if both the dollar value and percentage are known for the cost of goods sold, gross margin, operating expenses, or operating profit, then any of these components can be used to calculate net sales.

Use the following formula for calculating net sales dollars when the dollar amount and percent of any one component is known:

Net Sales $ = Component $ ÷ Component %

Example

Using the same example figures as in Sections 2.1 through 2.5, the cost of goods sold is $116,000 in dollars 58% as a percentage:

Calculate Net Sales in Dollars

Net Sales $ = Cost of Goods Sold $ × Cost of Goods Sold %

= $116,000 ÷ 58%

= $200,000

Using the Skeletal P&L Statement as an Analysis Tool

The retailer works with a combination of information or data to create the **planned** skeletal P&L statement for the next retail year. This statement is then used to compare the plan with actual happenings reported on the retailer's most **current** skeletal P&L statement. From this analysis, the retailer can adjust operating procedures to ensure profit.

The Importance of Formulas

On any given day in a retail business, many formulas must be used in order to solve daily business problems or to answer questions. It is essential for the retailer to understand how to manipulate the variables in the skeletal P&L formulas.

Part 2, Section 2.7
Adjusting the Four Profit Variables

Because profit is essential to a retail company's existence, all of the company's functions and activities must focus on profit. Astute retailers know that retail price and the skeletal P&L statement components of net sales (sales volume), cost of goods sold, and operating expenses may be manipulated to increase profit or meet profit goals when changes in other components reduce profit.

The Importance of Adjusting P&L Variables

Retailers constantly strive to increase sales volume, negotiate for lower costs of merchandise or transportation costs, and control operating expenses. When these components are manipulated in combination, the retailer is better equipped to reach planned profit goals.

It is not always easy for the retailer to simultaneously control all of these components. For example, the wholesale cost of goods may increase, forcing the retailer to increase the product's retail price. The higher price may result in reduced sales volume of that product classification, while operating expenses remain the same. In order to sell the goods, the retailer may have to take deep markdowns. However, the extra costs of advertising, sales promotion, and/or additional sales personnel will likely increase operating expenses. On the other hand, the retailer might reduce operating expenses so much that sales volume decreases because of insufficient marketing efforts and poor customer service.

The retailer must constantly experiment with the profit variables of retail price, net sales, cost of goods sold, and operating expenses in order to determine the most profitable mix for a particular store or department. The following examples illustrate how these profit variables may be manipulated in order to achieve the retailer's profit goal.

Examples of Adjusting Variables

A buyer in the Young Menswear department of a major department store located in a university town bought 150 navy blazers for the fall selling season. The buyer paid $250.00 per blazer and used a keystone plus $25.00 markup. The blazers did not sell as quickly as expected, because of warm, rainy fall weather. In addition, a regional economic decline reduced sales.

This planned skeletal P&L statement is used as the basis for all of the examples below:

Component	Dollars	Percentage
Net Sales	150 blazers × $525 = 78,750	100.00%
– Cost of Goods Sold	150 blazers × $250 = 37,500	47.62%
= Gross Margin	41,250	52.38%
– Operating Expenses	23,625	30.00%
= Operating Profit	17,625	22.38%

1. Change in Retail Price

For a weekend sales promotion, the buyer reduced the retail price of the blazers to 20% off.

Calculate the New Retail Price

Markdown $ = Original Retail Price $ × Reduction %

Markdown $ = $525.00 × 20%
= $105.00

New Retail Price $ = Original Retail Price $ – Markdown $

New Retail Price $ = $525.00 – $105.00
= $420.00

Assuming that all of the blazers sold at that price, the skeletal P&L statement below shows the consequences of reducing the retail price of the blazers. The cost of goods sold and operating expenses remained constant, since the blazers were taken directly from stock. No extra expenses were incurred for the sale.

Component	Dollars	Percentage
Net Sales	150 blazers × $420 = 63,000	100.00%
– Cost of Goods Sold	150 blazers × $250 = 37,500	59.52%
= Gross Margin	25,500	40.48%
– Operating Expenses	23,625	37.50%
= Operating Profit	1,875	2.98%

The 20% reduction in retail price decreases the profit from 22.38% to 2.98%. Also, it is highly unlikely that the operating expenses would remain constant; more than likely, the retailer would need to promote the sale, incurring additional sales promotional costs and further reducing the profit.

2. Change in Net Sales (with Change in Retail Price)

Sometimes reducing the price of a trendy item results in sales of a larger quantity of the item. Instead of initially reducing the price of 150 blazers, the buyer ordered an additional 25 blazers, for a total of 175 blazers, to be reduced during the fraternity rush season. The retailer sold all the blazers at a reduced retail price of $450.00. The cost of goods sold and operating expenses did not change with this promotional sale.

Component	Dollars	Percentage
Net Sales	175 blazers × $450 = 78,750	100.00%
– Cost of Goods Sold	175 blazers × $250 = 43,750	55.56%
= Gross Margin	35,000	44.44%
– Operating Expenses	23,625	30.00%
= Operating Profit	11,375	14.44%

Note the increased profit with the increased sales volume. However, it is unlikely that operating expenses would remain the same, because of the extra costs for preparation of merchandise, record keeping, and selling, which would have reduced the profit.

3. Change in the Cost of Goods Sold

Major vendors offer merchandise to retailers at a reduced wholesale cost at various times during the selling season. For example, some vendors offer their clients off-price (reduced wholesale cost) merchandise or special cuts when the buyer makes the initial seasonal purchase. During the season, vendors often offer promotional specials or other select goods for special sales. Also, after the vendor's major shipping period or at the end of the ordering season, vendors usually offer leftover merchandise, known as "closeouts," at a reduced wholesale cost. These buys often are placed in the retailer's inventory at an initial retail price based on the original wholesale cost, and then reduced during the end-of-season sales period, to help the retailer meet profit goals.

In the example of the blazers, the buyer purchased a closeout of 150 blazers at $200 each during the peak retail selling season and sold them at $525.00.

Component	Dollars	Percentage
Net Sales	150 blazers × $525 = 78,750	100.00%
– Cost of Goods Sold	150 blazers × $200 = 30,000	38.10%
= Gross Margin	48,750	61.90%
– Operating Expenses	23,625	30.00%
= Operating Profit	25,125	31.90%

The reduced cost of goods sold increases the gross margin and operating profit. However, operating expenses might also increase because of extra receiving and marking costs or extra selling expenses.

4. Change in Operating Expenses

Retailers constantly attempt to reduce operating expenses, or at least keep them under control. The Young Menswear buyer was able to reduce operating expenses by $5,800.00 while selling the same quantity of blazers at the same price.

Component	Dollars	Percentage
Net Sales	150 blazers × $525 = 78,750	100.00%
– Cost of Goods Sold	150 blazers × $250 = 37,500	47.62%
= Gross Margin	41,250	52.38%
– Operating Expenses	17,825	22.63%
= Operating Profit	23,425	29.75%

Note the increase operating profit, compared with that shown in the base P&L statement.

Increased retail price or increased net sales will usually result in increased profit, as will decreased cost of goods sold or decreased operating expenses. However, increased net sales often result in increased operating expenses (selling and promotional expenses), offsetting the increased profit. **The retailer must continually manipulate the four profit variables in order to find the most profitable pattern for each store.**

Part 2, Section 3
Expanded Profit & Loss Statement: Calculating the P&L Components

Part 2, Section 3.1
Gross & Net Sales

As discussed in Part 2, Section 1, "Basic Components of the P&L Statement," gross sales are defined as the total retail prices charged to the customer (including both cash and credit sales) by the retailer for all goods and services before any retail reductions.

The Customer Return Rate

Gross sales are used to calculate the customer return rate. A high customer return rate might indicate a problem in the retailer's merchandise selection (e.g., fashion level or assortment mix), lower-quality merchandise than expected by the customer, or prices higher than those of the competition or than the customer's perceived value of the product.

The following formula is used to calculate the customer return rate as a percentage:

Customer Return Rate % = Customer Returns & Allowances $ ÷ Gross Sales $

Note that the customer return rate is the only percentage on the expanded P&L statement that is based on gross sales dollars, rather than net sales dollars.

Gross and Net Sales on the Expanded P&L Statement

In Part 2, Section 2.1, net sales as shown on the skeletal P&L statement are defined as gross sales minus customer returns and allowances.

Unlike the skeletal P&L statement, the expanded P&L statement shows gross sales, and it takes into account all types of retail reductions (not just customer returns and allowances). Net sales as shown on the expanded P&L statement are defined as gross sales minus all retail reductions (customer returns and allowances, employee discounts, markdowns, and shrinkage). Reductions are discussed in more detail in Part 2, Section 3.2.

The following formulas are used to calculate gross sales dollars and percentage:

Gross Sales $ = Net Sales $ + Reductions $

Gross Sales $ = Net Sales $ × Gross Sales %

Gross Sales % = Net Sales % + Reductions %

All examples in Section 3 use the following dollar figures for calculations:

Customer Returns & Allowances	15,000	Gross Sales	372,000
Employee Discounts	3,000	Net Sales	300,000
Markdowns	45,000	Gross Margin	139,500
Shrinkage	9,000	Contribution Margin	111,000
Invoiced Cost of Goods	161,500	Maintained Markup	133,500
Transportation	5,000	Alterations	3,000
Direct Operating Expenses	28,500	Cash Discounts	9,000
Indirect Operating Expenses	87,000	Operating Profit	24,000

Calculate Gross Sales

Use the formulas and figures above to calculate gross sales in dollars and as a percentage.

Calculate Gross Sales in Dollars

Reductions $ = $15,000 + $3,000 + $45,000 + $9,000
= $72,000

Gross Sales $ = Net Sales $ + Reductions $
= $300,000 + $72,000
= $372,000

Calculate Gross Sales as a Percentage

Reductions % = Reductions $ ÷ Net Sales $
= $72,000 ÷ $300,000
= 24%

Gross Sales % = Net Sales % + Reductions %
= 100% + 24%
= 124%

Calculate Gross Sales in Dollars from Gross Sales Percentage

Gross Sales $ = Net Sales $ × Gross Sales %
= $300,000 × 124%
= $372,000

Part 2, Section 3.2
Retail Reductions

Reductions are decreases in the retail value of the merchandise, due to customer returns and allowances, employee discounts, markdowns, and shrinkage (loss of inventory). Reductions are unavoidable in the operations of a retail store. They entered as as line items on the expanded P&L statement, and must be monitored and controlled.

The Importance of Monitoring Reductions

Reductions must be monitored and controlled, to protect the retailer's bottom line — increased reductions reduce net sales and can trickle down to reduce the gross margin and profit. Retailers must establish policies and procedures for controlling each type of reduction..

For example, shrinkage due to employee theft and customer shoplifting must be monitored in order to ensure that employees are following guidelines for preventing the theft of merchandise. Employee pilferage can cost the retailer thousands of dollars annually. Rules for employee purchases must be in place covering the process of making purchases during the workday, temporary storage of those purchases, and procedures for removing the purchased goods from the store. These rules are needed to prevent employees from devising schemes to take merchandise from the store without paying for it in full or at all.

Customer Returns and Allowances

The amounts of customer returns and allowances differ among store types and depending on the store's policies and procedures for returns. **Customer returns**, either 100% or partial refunds to the customer for returned items, are deductions in retail price, most often made after the sales transaction has been recorded. **Customer allowances** are partial price reductions made by the retailer on soiled, damaged, or defective merchandise in order to entice customers to purchase the items "as is." Giving customer allowances saves the retailer the time and money it would take to process the goods and return them to the vendor.

Customers return goods for many reasons. The customer might be dissatisfied with an item's color, fit, style, comfort, or performance, or might have discovered damage or defects, or the item might have been an unwanted gift. Especially in the case of mail or online orders, the item may not be what the customer expected, or it may not have arrived in time for its intended use. Or the customer may simply have changed his or her mind.

The Effects of Returns Policies

In order to build a loyal customer following, many retailers maintain lenient returns polices. Knowing that an item can be returned without a hassle or a long wait can make a customer more likely to shop with a given retailer.

Employee Discounts

Employee discounts are retail price reductions given by the retailer to show appreciation for employees and to encourage them to buy the store's merchandise. Some retailers consider employee discounts as a benefit to both the employee and employer—reduced prices result in increased purchases by employees, who are happy about the savings.

Some retailers require employees to wear the store's products to work, in order to become familiar with their features, benefits, and quality, thus gaining knowledge and expertise to aid them in selling the products to customers. The employees thus become walking advertisements for the store. The retailer benefits by retaining happy employees with the knowledge and expertise to sell and promote the product. The employees feel like an integral part of the business and take pride in their work, increasing their loyalty to the retailer.

Markdowns

Markdowns are a fact of life for the retailer and can be either a setback or a useful merchandising tool. As discussed in Part 1, Section 4.1, the three primary reasons for markdowns are

1. to correct buyer error,
2. as a managerial operational device to move inventory, and
3. as a merchandising device to promote sales.

Buyer Error

Buyers must take risks when planning and procuring merchandise. Furthermore, they cannot control external environmental factors that affect sales (such as the economy, the weather, or consumer spending patterns). Therefore, some of the merchandise purchased even by an experienced, astute buyer will inevitably be reduced.

Operational Devices

Management may decide to mark down merchandise in order to increase the efficiency of store operations:

- Pricing errors can occur, and it may be necessary to reduce prices to match the prices of the competition or meet market demands.
- Leftover merchandise from a major selling season—odd lots and broken sizes—must be reduced in order to make space for more saleable product or to create cash flow.
- Merchandising errors require markdowns. Merchandise housed incorrectly or not displayed appropriately must be marked down because of lack of customer recognition and demand. Merchandise not promoted in a timely manner before the peak selling season may need to be marked down.
- Obsolescence of a fashion trend or product design may call for a deep cut in the initial retail price of an item.

Merchandising Devices

Promotional markdowns can be used as an important merchandising tool. Goods may be purchased with the intent of marking them down later for special events and sales promotions. Such markdowns usually are accounted for separately from those taken as managerial operational devices or to correct buyer error.

The Importance of Controlling Markdowns

Regardless of the reasons for markdowns, they must be controlled to improve the retailer's financial performance. The experienced buyer must control risks through well-planned purchases and development of appropriate marketing and effective merchandising techniques. Planned policies and procedures are necessary to guide the controlled management of markdowns.

Shrinkage

Shrinkage of merchandise must be taken into consideration when recording reductions. Shrinkage (also known as "shortage") is the difference between an actual physical inventory count and the amount of merchandise recorded on the book or paper inventory. If the book inventory exceeds the physical inventory, there is a shortage of inventory, and if the physical inventory exceeds the book inventory, there is an overage of inventory. Neither scenario is ideal for the retailer.

Although retailers now use computers to track inventory, shortages are not unusual, due not only to pilferage and shoplifting, but also to errors in counting and calculating markdowns and errors made when paying invoices or recording sales transactions. An acceptable shortage for a retailer is usually 2% to 3% of net sales.

Calculate Reductions

All of these types of reductions are entered as line items on the expanded P&L statement. They are subtracted from gross sales to determine the amount of net sales. The following formulas are used to calculate reductions:

Reductions $ = Customer Returns & Allowances $ + Employee Discounts $ + Markdown $ + Shrinkage $

Reductions $ = Net Sales $ × Reductions %

Reductions % = Reductions $ ÷ Net Sales $

Use the formulas above and the following figures to calculate reductions in dollars and as a percentage.

Customer Returns & Allowances	**15,000**	**Gross Sales**	**372,000**
Employee Discounts	**3,000**	**Net Sales**	**300,000**
Markdowns	**45,000**	**Gross Margin**	**139,500**
Shrinkage	**9,000**	**Contribution Margin**	**111,000**
Invoiced Cost of Goods	**161,500**	**Maintained Markup**	**133,500**
Transportation	**5,000**	**Alterations**	**3,000**
Direct Operating Expenses	**28,500**	**Cash Discounts**	**9,000**
Indirect Operating Expenses	**87,000**	**Operating Profit**	**24,000**

Calculate Reductions in Dollars

Reductions $ = Customer Returns & Allowances $ + Employee Discounts $
+ Markdown $ + Shrinkage $
= $15,000 + $3,000 + $45,000 + $9,000
= $72,000

Calculate Reductions as a Percentage

Reductions % = Reductions $ ÷ Net Sales $
= $72,000 ÷ $300,000
= 24%

Calculate Reductions in Dollars from the Reductions Percentage

Reductions $ = Net Sales $ × Reductions %
= $300,000 × 24%
= $72,000

The Format of the Expanded P&L Statement

The format of the expanded P&L statement is the same as that of the skeletal P&L statement except that lines are added for the additional detailed information. Reductions are subtracted from gross sales to calculate net sales. The expanded P&L statement begins like this:

Component	Dollars	Percentage
Gross Sales	**372,000**	**124.00%**
– Returns & Allowances	116,000	5.00%
– Employee Discounts	3,000	1.00%
– Markdowns	45,000	15.00%
– Shrinkage	9,000	3.00%
= Net Sales	**300,000**	**100.00%**

Part 2, Section 3.3
Total Cost of Goods Sold

As discussed in Section 2.2, the total cost of goods sold includes the following elements:

- the vendor's list price (before transportation costs or vendor discounts)
- trade or quantity discounts
- transportation costs (including insurance where applicable)
- alterations (where applicable)
- cash discounts

On the skeletal P&L statement, the cost of goods sold is a one-line entry that includes all of the above subcomponents. **On the expanded P&L statement, the following subcomponents are broken out as line items:**

- the invoiced cost of goods (the vendor's list price less trade and quantity discounts)
- transportation costs (including shipping insurance)
- alterations
- cash discounts

The Cost of Goods Includes the Beginning Inventory

The total cost of goods includes the cost of the beginning inventory plus the cost of additional goods purchased during a specific period of time.

The Invoiced Cost of Goods

A discount is a reduction in the wholesale price offered to the retailer by the vendor. In some segments of the apparel industry, there are standard discounts. In others, discounts may be negotiated as the cost of doing business with that particular vendor. The three major types of discounts are quantity, trade, and cash discounts. Not all vendors offer all of these types of discounts; vendors must consider which discounts they wish to offer before determining the wholesale price of their merchandise.

The Invoiced Cost of Goods Does Not Reflect Cash Discounts

On the expanded P&L statement, the invoiced cost of goods reflects quantity and trade discounts, but it does not reflect cash discounts. Cash discounts are a separate line item on the expanded P&L statement, and are discussed separately in this section.

Negotiating the Wholesale Price

When placing an order during a market trip or reordering to replenish quick-selling merchandise, the buyer frequently tries to negotiate with the vendor to lower the wholesale cost of the merchandise. However, some manufacturers establish the wholesale price at the start of the shipping season and do not negotiate lower prices until the end of the season. Others do not negotiate at all.

For example, many designer and nationally branded apparel companies do not negotiate wholesale prices because they have established a status image, marketing their product based on quality and brand equity (the brand's value as determined by consumer perceptions). These companies may sell to several retailers in the same geographic area, and they do not want these retailers to compete for sales of their products on the basis of price. To protect their products' image, they also do not want the merchandise to be discounted or sold off-price during the peak selling season.

Quantity Discounts

A quantity discount is allowed if the retailer buys a specified quantity of an item or makes a specified quantity of purchases over a specified period of time. Usually, the size of the discount increases with the quantity purchased. Quantity discounts are deducted before the invoice is submitted to the retailer, before any other discounts are taken, and regardless of the invoice due date. Quantity discounts are also known as "patronage discounts," since they are used to entice the retailer to buy larger quantities or to return to that vendor for similar purchases.

Sometimes vendors bundle the items in dozens, sold as prepacks. For example, a prepack of a dozen garments may include only one color and specified quantities of sizes (e.g., two smalls, four mediums, three larges, and three extra larges), and the vendor may offer a package of 25 prepacks at a substantial quantity discount. Retailers with several stores can take advantage of prepacks by dividing the items by style, color, and size, and matching them to specific locations for different target consumers.

Example of a Quantity Discount

Men's cotton T-shirts are sold in prepacks of a dozen shirts at a list price of $60.00 per prepack ($60.00 per dozen). The vendor offers a 10% quantity discount on the purchase of the 25 prepacks. **What is the invoiced cost of the 25 prepacks?**

Calculate Invoiced Cost from the List Price & Quantity Discount

List Price $ = $60.00/prepack
Quantity = 25 prepacks
Discount % = 10%

List Price $ = $60.00 × 25
= **$1,500.00**

Discount $ = List Price $ × Discount %
= $1,500.00 × 10%
= **$150.00**

Invoiced Cost $ = List Price $ – Discount $
= $1,500.00 – $150.00
= **$1,350.00**

Trade Discounts

Trade discounts are based on the vendor's list price (suggested retail price) for the merchandise. (However, note that vendors cannot legally require the retailer to sell an item at a specific or suggested retail price.) Trade discounts usually are quoted as a series of percentage discounts from the vendor's list price. Trade discounts are deducted before the invoice is sent to the retailer.

For example, a cotton blouse may have a list price in the vendor's catalog of $75.00 with discounts of 30% and 10%. These discounts cannot be added (they do not equal a 40% discount), but must be calculated and deducted separately. That is, each discount must be taken separately in the sequence listed, and must be taken from the previously discounted price.

Example of a Trade Discount

A retailer purchases a cotton blouse as a list price of $75.00 with trade discounts of 30% and 10%. What is the invoiced cost of the blouse?

Calculate Invoiced Cost from List Price & Trade Discounts

List Price $ = $75.00	$75.00 × 30% = **$22.50**
Discounts = 30% and 10%	$75.00 – $22.50 = **$52.50**
	$52.50 × 10% = **$5.25**
	Invoiced Cost = $52.50 – $5.25 = **$47.25**

Trade discounts are also known as "functional discounts," because they are based on the function of the company making the purchase (e.g., industrial user, wholesaler, interior designer, or retailer). For example, a retailer might receive lower discounts than an interior designer, who offers the customer different services.

The Availability of Discounts

Different segments of the industry offer different types of discounts based on the channel of distribution, merchandise type, and zone in which the merchandise is marketed. The astute buyer takes advantage of any opportunity to negotiate for quantity or trade discounts.

Returns to the Vendor

In calculating the invoiced cost of goods, returns to the vendor also are deducted. These include returns of defective or poor-quality goods, canceled orders shipped after their cancelation dates, late deliveries, or merchandise not ordered by the retailer.

Transportation Costs

Transportation costs have become increasingly important as retailers have broadened their sources for merchandise internationally. Transportation terms can be negotiated with the

vendor—the method, the cost, and the point at which the goods will be transferred from the vendor to the retailer. The terminology commonly used in negotiating transportation terms is "free on board" (FOB), followed by the location at which the title to the goods passes from the vendor to the retailer.

Transportation changes generally must be prepaid (i.e., at the time the vendor transfers the goods to the carrier). Most commonly, the vendor pays the shipping cost and (if applicable) the cost of insurance covering the goods during the shipping process from the vendor's loading dock to the retailer's loading dock. When the retailer's receiving room personnel sign the shipping documents, the title to the goods passes from the vendor to the retailer. The retailer then reimburses the vendor for the transportation costs. The terms for this arrangement are "FOB destination; charges reversed." In place of "destination," the terms will specify the retailer's location (the city where the retail company is located).

Transportation Costs on P&L Statements

Transportation costs usually are included on the invoice and are paid by the retailer when the invoice is paid. However, they are not included in the "invoiced cost of goods," but are accounted for as a separate cost on both the skeletal and extended P&L statements.

Alterations

Retailers may also incur the cost of post-sale alterations. Although many retailers no longer offer free alterations, there are exceptions. In particular, most menswear stores are expected to provide alterations as a free service, because many items arrive from the manufacturer with unfinished pants hems or sleeve lengths. To complete the sale, the garments must altered to fit the customer.

Alterations and the Cost of Goods Sold

Because of the high cost of alterations, retailers are increasingly selective about what alterations to cover—some alterations are free, while others must be paid for by the customer. The cost of free alterations is included in the cost of goods sold, but the cost of those paid for by the customer are not.

Along with alterations, some retailers include workroom costs (the costs of preparing the merchandise for presentation on the sales floor) in the cost of goods sold. However, workroom costs do not include receiving costs, such as ticketing and hanging goods for the sales floor.

Cash Discounts

In the women's apparel industry, as well as in accessories and often in children's apparel, cash discounts are standardized and are expected by the retail buyer. A cash discount is a predetermined percentage discount for paying a vendor's invoice on or before a designated date. Therefore, a buyer never turns in an order to the vendor or "leaves paper" without specific cash

discount terms written on the order copy. The same terms are then specified on the vendor's order acknowledgement (i.e., the vendor's written acceptance of the buyer's order), as well as on the vendor's invoice. The terms include both the percentage of the discount and the "dating" (the time limit within which the retailer must pay the invoice). Dating for payment is based on the date of the invoice, which is usually the date on which the merchandise is shipped from the vendor's distribution center.

The standard cash discount terms for women's apparel is 8/10 EOM. This means that the retailer may deduct 8% from the invoiced cost of the merchandise if the invoice is paid within 10 days after the end of the month (EOM) in which the invoice is dated. If the invoice is dated from the 1st to the 25th of the month, the invoice must be paid by the 10th of the next month. However, if the invoice is dated from the 26th to the 31st of the month, it is considered to be dated the 1st of the following month. This gives the retailer an extra month to pay, and therefore, extra time to sell the merchandise before payment is due.

How the Cash Discount is Made

The retailer never receives any cash from the vendor, but deducts the cash discount percentage from the invoiced cost of the goods before paying the invoice. This deduction is made only on the cost of the merchandise itself, not on transportation costs. The cash discount is a separate line item on the expanded P&L statement.

Example of a Cash Discount

A cotton sweater with an invoiced cost of $25.00 and terms of 8/10 EOM was purchased by the retail buyer in the Misses Sportswear department. The sweater was shipped on October 10 and received in the store on October 30. The invoice is dated October 10. **What is the discounted amount to be paid, and when must the invoice be paid in order for the retailer to take the 8% discount?**

Calculate the Amount To Be Remitted

Invoiced Cost $ = $25.00

Cash Discount % = 8%

Cash Discount $ = $25.00 × 8%

= $2.00

Amount Remitted $ = Cost $ – Cash Discount $

= $25.00 – $2.00

= $23.00

Since the invoice is dated October 10, 10 days after the EOM is November 10. Therefore, to take the 8% discount, the retailer must pay the invoice by November 10. If the invoice had instead been dated October 30, the retailer would have had until December 10 to pay the invoice and take the 8% discount.

Cash discount terms may also be expressed as 8/10 net 30 EOM, which means that an 8% discount is given for payment within 10 days, and the full amount is due within 30 days after the end of the month.

The Importance of Tracking All Cost Components

To accurately account for the total cost of goods sold, the retailer must track all expenses and discounts related to the cost of the goods. Beyond the list price of the merchandise, subcomponents of the cost of goods sold include discounts that lower the cost and additional expenses that increase the cost. Buyers should negotiate these subcomponents whenever possible.

Calculating the Total Cost of Goods Sold

All of the subcomponents of the total cost of goods sold are line entries on the expanded P&L statement. The following formula is used to calculate the total cost of goods sold:

Cost of Goods Sold $ = Invoiced Cost of Goods $ + Transportation $ + Alterations $ – Cash Discounts $

Use this formula and the following figures to calculate the total cost of goods sold in dollars.

Customer Returns & Allowances	**15,000**	**Gross Sales**	**372,000**
Employee Discounts	**3,000**	**Net Sales**	**300,000**
Markdowns	**45,000**	**Gross Margin**	**139,500**
Shrinkage	**9,000**	**Contribution Margin**	**111,000**
Invoiced Cost of Goods	**161,500**	**Maintained Markup**	**133,500**
Transportation	**5,000**	**Alterations**	**3,000**
Direct Operating Expenses	**28,500**	**Cash Discounts**	**9,000**
Indirect Operating Expenses	**87,000**	**Operating Profit**	**24,000**

Calculate Total Cost of Goods Sold in Dollars

Cost of Goods Sold $ = Invoiced Cost $ + Transportation $ + Alterations $ – Cash Discounts $

= $161,500 + $5,000 + $3,000 – $9,000

= $160,500

Expanded P&L Statement Including Cost of Goods Sold

Below is the expanded P&L statement showing the subcomponents of the total cost of goods sold. These cost elements allows calculation of the maintained markup and the gross margin.

Component	Dollars	Percentage
Gross Sales	**372,000**	**124.00%**
– Returns & Allowances	116,000	5.00%
– Employee Discounts	3,000	1.00%
– Markdowns	45,000	15.00%
– Shrinkage	9,000	3.00%
= Net Sales	**300,000**	**100.00%**
– Invoiced Cost of Goods	161,500	53.83%
– Transportation	5,000	1.67%
= Maintained Markup	**133,500**	**44.50%**
– Alterations	3,000	1.00%
+ Cash Discounts	9,000	3.00%
= Gross Margin	**139,500**	**46.50%**

Part 2, Section 3.4
Gross Margin & Contribution Margin

As discussed in Part 2, Section 2.3, the gross margin is the difference between net sales and the total cost of goods sold. The following formula may be used to calculate the gross margin on the expanded P&L statement:

Gross Margin $ = Net Sales $ – Invoiced Cost of Goods $ – Transportation $ – Alterations $ + Cash Discounts $

Operating Expenses

As discussed in Part 2, Section 2.4, the skeletal P&L statement includes all operating expenses on one line, as total operating expenses. However, on the expanded P&L statement, direct expenses and indirect expenses are listed separately, and are used to calculate the contribution margin and the operating profit. This helps the retailer to understand how operating expenses affect profitability and to identify potential savings on direct expenses.

Direct Expenses

Direct expenses are those operating expenses that can be directly attributed to the activities or functions of a specific department. In other words, if the department were eliminated from the store, these expenses would not be incurred. Examples of direct expenses include the salaries of the department's personnel, supplies needed for doing business in that department, or advertising specific to that department. Direct expenses are affected by the department's sales volume.

Retail managers and buyers attempt to control the dollar amount of direct expenses in order to assure that the gross margin is sufficient to cover the indirect expenses, ensuring profitability. Savings on controllable expenses are important to the retailer's bottom line.

Controllable Expenses

Direct expenses are also known as "controllable expenses," because the department manager or buyer has some degree of control over them. For example, department expenses can be controlled through decisions about advertising or the number of sales associates.

Indirect Expenses

Indirect expenses are costs of operating the business as a whole; they would still be incurred if a particular department or division of the store were eliminated. Examples include rent, building maintenance, building insurance, management base salaries, and institutional advertising. Indirect expenses bear little or no relationship to the sales volume of any one department or division of the store. Because these expenses are not controllable by the department, they are sometimes called "fixed expenses."

Calculating the Contribution Margin

On the expanded P&L statement, the contribution margin (also known as the "controllable margin") is calculated by subtracting the direct (controllable) expenses from the gross margin. The contribution margin is a useful indicator of a department's profitability. The following formula is used to calculate the contribution margin:

Contribution Margin $ = Gross Margin $ – Direct Expenses $

Use this formula and the following figures to calculate the total cost of goods sold in dollars.

Customer Returns & Allowances	**15,000**	**Gross Sales**	**372,000**
Employee Discounts	**3,000**	**Net Sales**	**300,000**
Markdowns	**45,000**	**Gross Margin**	**139,500**
Shrinkage	**9,000**	**Contribution Margin**	**111,000**
Invoiced Cost of Goods	**161,500**	**Maintained Markup**	**133,500**
Transportation	**5,000**	**Alterations**	**3,000**
Direct Operating Expenses	**28,500**	**Cash Discounts**	**9,000**
Indirect Operating Expenses	**87,000**	**Operating Profit**	**24,000**

Calculate the Contribution Margin in Dollars

Contribution Margin $ = Gross Margin $ – Direct Expenses $
= $139,500 – $28,500
= $111,000

Note that the contribution margin is large enough to cover the indirect expenses of $87,000, indicating that the retailer will make a profit.

Calculating the Operating Profit

The operating profit is calculated by subtracting the indirect expenses from the contribution margin:

Operating Profit $ = Contribution Margin $ – Indirect Expenses $

Use this formula and the figures above to calculate the operating profit.

Calculate the Operating Profit in Dollars

Operating Profit $ = Contribution Margin $ – Indirect Expenses $
= $111,000 – $87,000
= $24,000

The following expanded P&L statement shows the subcomponents of the operating expenses, the contribution margin, and the operating profit.

Component	Dollars	Percentage
Gross Sales	**372,000**	**124.00%**
– Returns & Allowances	116,000	5.00%
– Employee Discounts	3,000	1.00%
– Markdowns	45,000	15.00%
– Shrinkage	9,000	3.00%
= Net Sales	**300,000**	**100.00%**
– Invoiced Cost of Goods	161,500	53.83%
– Transportation	5,000	1.67%
= Maintained Markup	**133,500**	**44.50%**
– Alterations	3,000	1.00%
+ Cash Discounts	9,000	3.00%
= Gross Margin	**139,500**	**46.50%**
– Direct Expenses	28,500	9.50%
= Contribution Margin	**111,000**	**37.00%**
– Indirect Expenses	87,000	29.00%
= Operating Profit	**24,000**	**8.00%**

If the contribution margin is not calculated, the direct and indirect operating expenses are listed on two separate lines, before the operating profit.

The Expanded P&L Statement as a Merchandising Tool

The expanded P&L statement is a merchandising tool the retailer can use to analyze store operations and solve everyday business problems. Gross margin, maintained margin, and contribution margin can be compared, and the initial markup can be calculated. Components calculated as percentages of net sales are useful for making comparisons across product classifications, departments, divisions, stores, or store groups.

Part 2, Section 3.5
Inventory Turnover & GMROI

To understand how to increase profitability, the retailer needs to monitor inventory productivity, in addition to the P&L components discussed above. Although the gross margin provides a measure of profitability, it does not take into account how rapidly the inventory is sold (turnover) or the dollar amount invested in the inventory. Turnover and gross margin return on investment (GMROI) are key indicators of retail performance.

Inventory Turnover

Turnover (also known as "stock turnover" or "stock turn") is the number of times the average inventory on hand (measured as the average retail price of the inventory) is sold and replaced within a given period of time (usually six months or a year). Turnover is a ratio, not a dollar amount or percentage. It is calculated by the following formula:

Turnover = Net Sales $ ÷ Average Inventory $

The Average Inventory

The average inventory for a month is the retail value of the beginning-of-the month inventory (BOM stock) plus the retail value of the end-of-the-month inventory (EOM stock) divided by 2.

The average inventory for periods longer than a month can be calculated by totalling the BOM stock for each month plus the EOM stock for the last month and dividing by the number of months plus 1. For example, for the six-month merchandise plan (explained in detail in Part 3), average inventory for the six-month period is calculated by totalling the BOM stock for each of six months plus the EOM stock for the last month and dividing by 7:

Average Inventory $ = (BOM Stock $ for 6 Mo. + End-of-Period Stock $) ÷ 7

Turnover Goals

Retailers desire high turnover, as it indicates that inventory is selling quickly and is being replaced by more current or updated inventory. High turnover also reduces expenses associated with storage of inventory, keeps the inventory fresh and appealing, and reduces the need for markdowns on old merchandise.

However, it is possible for turnover to be too high. Frequent purchases of merchandise in small quantities can increase shipping and handling expenses, eliminate quantity discounts, and result in the loss of sales to consumers who wanted to buy the out-of-stock goods. The retailer needs to determine an optimum turnover rate.

Gross Margin Return on Investment

Retailers attempt to increase profit by increasing sales on less inventory. If the retailer can reach or exceed the planned sales volume on "lean" inventories, then gross margin will increase. The gross margin return on investment (GMROI) (also known as "gross margin return on inventory investment," or GMROII) relates the gross margin to the retailer's investment in inventory. GMROI measures how many gross margin dollars are produced per dollar of the cost of the average inventory. In other words, it combines gross margin and turnover into a single measure of inventory profitability.

The GMROI is a ratio, not a dollar amount or percentage. Different industries use various formulas, based on what costs they take into account. GMROI most commonly is calculated by the following formulas:

GMROI = Gross Margin $ ÷ Average Inventory at Cost $

GMROI = (Gross Margin % × Turnover) ÷ (100% – Markup %)

The Significance of GMROI

A GMROI greater than 1 means that the retailer is selling inventory at a price greater than the cost of purchasing it. If a retailer maintains a high turnover and a high gross margin, the GMROI usually will be high, and more profit will be realized. GMROI can be used at any level of the retail operation — company, store, group of stores, or department. It is often used to compare the performance of departments or product categories.

Part 2
Review Problems

Using the appropriate formulas, calculate the answers to the following problems, and select the correct answers from the available choices. The answer key may be found on page 166.

Instructions for Problems 1–8

Set up a complete (skeletal or expanded) P&L Statement, showing dollars and percentages for **all** components:

- Round dollar values to the nearest dollar.
- Round percentages to two decimal places (i.e., carry out to three places and round to two).
- Using the appropriate formulas, calculate the answers to the problems, in both dollars and percentages.
- Select the correct answers from the available choices.

1. Use these figures to set up a complete P&L Statement and solve for (1) gross margin and (2) operating profit:

Net Sales	$180,000
Cost of Goods Sold	$99,000
Operating Expenses	40.00%

	Gross Margin	*%*	*Operating Profit*	*%*
a.	$81,000	45.00%	$9,000	5.00%
b.	$72,000	40.00%	$81,000	45.00%
c.	$99,000	55.00%	$9,000	5.00%
d.	$9,000	5.00%	$181,000	45.00%

2. Use these figures to set up a complete P&L Statement and solve for (1) cost of goods sold and (2) operating expenses:

Net Sales	$500,000
Gross Margin	$220,500
Operating Profit	$22,500

	Cost of Goods Sold	*%*	*Operating Expenses*	*%*
a.	$220,500	44.10%	$198,000	39.60%
b.	$198,000	39.60%	$279,500	44.90%
c.	$279,500	55.90%	$198,000	5.00%
d.	none of the above		none of the above	

3. Use these figures to set up a complete P&L Statement and solve for (1) cost of goods sold and (2) operating profit:

Net Sales	$395,000
Gross Margin	43.50%
Operating Expenses	$176,000

	Cost of Goods Sold	*%*	*Operating Profit*	*%*
a.	$171,825	43.50%	$4,175	39.60%
b.	$223,175	56.50%	$4,175	44.90%
c.	$176,500	44.47%	$4,000	5.00%
d.	$223,175	56.50%	($4,175)	(1.06%)

4. Use these figures to set up a complete P&L Statement and solve for (1) net sales, (2) cost of goods sold, and (3) operating profit:

Gross Margin	$94,650
Gross Margin	42.80%
Operating Expenses	40.20%

	Net Sales	*%*	*Cost of Goods Sold*	*%*	*Operating Profit*	*%*
a.	$221,145	100.00%	$126,495	57.20%	$5,750	2.60%
b.	$126,495	57.20%	$5,750	2.60%	($5,750)	(2.60%)
c.	$221,145	100.00%	$94,650	42.80%	$5,750	2.60%
d.	$126,495	57.20%	$126,495	57.20%	$5,750	2.60%

5. Use these figures to set up a complete P&L Statement and solve for (1) gross sales, (2) maintained markup, and (3) operating expenses:

Reductions	8.00%	Net Sales	$295,800
Invoiced Cost of Goods	50.50%	Transportation	$3,735
Alterations	$2,366	Cash Discounts	$11,832
Operating Profit	$19,634		

	Gross Sales	*%*	*Maintained Markup*	*%*	*Operating Expenses*	*%*
a.	$221,145	100.00%	$126,495	57.20%	$5,750	2.60%
b.	$126,495	57.20%	$5,750	2.60%	($5,750)	(2.60%)
c.	$221,145	100.00%	$94,650	42.80%	$5,750	2.60%
d.	$126,495	57.20%	$126,495	57.20%	$5,750	2.60%

6. Use these figures to set up a complete P&L Statement and solve for (1) gross margin, (2) contribution margin, and (3) operating profit:

Net sales	$459,890
Cost of Goods Sold	55.88%
Direct Operating Expenses	20.80%
Indirect Operating Expenses	25.60%

	Gross Margin	*%*	*Contribution Margin*	*%*	*Operating Profit*	*%*
a.	$459,890	44.20%	$203,271	44.20%	$10,118	2.20%
b.	$203,271	44.20%	$107,614	25.60%	($10,118)	(2.20%)
c.	$203,271	44.20%	$107,614	23.40%	($10,118)	(2.20%)
d.	none of the above		none of the above		none of the above	

7. Use these figures to set up a complete P&L Statement and solve for (1) maintained markup, (2) gross margin, and (3) contribution margin:

Net Sales	$659,650	Invoiced Cost of Goods	48.5%
Transportation	$9,895	Alterations	1.00%
Cash Discounts	$13,193	Direct Operating Expenses	20.50%
Operating Profit	$46,175	Indirect Operating Expenses	23.50%

	Maintained Markup	*%*	*Gross Margin*	*%*	*Contribution Margin*	*%**
a.	$336,421	51.00%	$336,421	51.00%	$201,193	30.50%
b.	$155,018	23.50%	$135,228	20.50%	$201,193	30.50%
c.	$201,193	30.50%	$155,018	23.50%	$336,421	51.00%
d.	$329,825	50.00%	$336,421	51.00%	$201,193	30.50%

**Rounding may result in variation of some dollar amounts by $1.00.*

8. Use these figures to set up a complete P&L Statement and solve for (1) net sales, (2) gross margin, and (3) operating expenses:

Cost of Goods Sold	$110,000
(Loss)	($1,200)
(Loss)	(0.80%)

	Net Sales	*%*	*Gross Margin*	*%*	*Operating Expenses*	*%*
a.	$150,000	100.00%	$41,299	27.47%	$40,000	26.67%
b.	$150,000	100.00%	$40,000	26.67%	$41,200	27.47%
c.	$150,000	100.00%	$41,200	27.47%	$41,200	26.67%
d.	none of the above		none of the above		none of the above	

9. A cotton sweater manufacturer needs to clear a distribution center to make space for the arrival of new seasonal merchandise. The sweaters are prepacked in packages of 10 dozen. The list price is $150.00 per dozen, with discounts of 30% and 15%. A 5% cash discount may be deducted if the invoice is paid within 15 days of the date of the invoice.

   What amount should be remitted for one package of sweaters if the invoice is paid within the 15-day discount period?

   a. $847.87
   b. $892.50
   c. $1,050.00
   d. None of the above

10. A Contemporary Sportswear buyer purchased 12 dozen pairs of cotton cropped pants for a special weekend sales event. She paid $20.00 for each pair of pants. The shipping cost for the 12 dozen cotton pants was $43.20, with terms of FOB destination, charges reversed. The vendor offers a standard cash discount of 8/10 EOM. The pants were shipped on March 30, and the invoice was dated April 1.

    (1) What amount should be paid if the retailer is taking the 8/10 EOM terms?

    (2) When must the invoice be paid by for the retailer to receive the cash discount?

	Amount	*Due*
a.	$2,649.60	May 8
b.	$2,880.00	April 10
c.	$2,692.80	May 10
d.	none of the above	none of the above

Part 3

Preparing the Six-Month Merchandise Plan

Part 3, Section 1
Introduction to the Six-Month Merchandise Plan

Part 3, Section 1.1
Introduction

Most retail stores are organized into divisions and departments (or merchandise classifications and subclassifications), for which merchandising plans and controls are developed. The divisions and departments are **strategic business units (SBUs),** operating as small businesses within the retail organization. They are expected to contribute to the overall profit and sales goals of the organization.

Strategic Business Units

SBUs may be organized based on the targeted consumer (plus-size women, big and tall men), consumer's lifestyle (activewear), merchandise zones (designer, contemporary), price ranges (better, moderate), size ranges (misses, petites), wearing occasion (workwear, party wear), selling season (spring or fall), or other categories.

These divisions or departments (or classifications and subclassifications) of merchandise usually parallel the wholesale market from which the merchandise is procured. For example, many vendors produce misses' sportswear classifications (e.g., sizes 8 or 10 through 18 or 20, at moderate price points), such as pants, shorts, T-shirts, blouses, shirts, and sweaters. Many stores have misses' sportswear departments located in concept shops or within specific areas of the store. In a misses' sportswear department, all of these classifications and brands of products can be merchandised together for ease and convenience of shopping.

The SBU Merchandise Plan

The expanded P&L statement developed by the top management of a retail organization or store gives the retailer the information needed to establish store and merchandising objectives designed to support planned profit and sales goals. The objectives relate the planned profit goals to merchandise planning and control.

At the store level, an overall master store merchandising plan is subdivided based on the store's organizational structure. At the department or division level, each SBU will have its own merchandise plan, designed to ensure that the SBU meets its profit objectives.

Each SBU must have planning and control tools to reach specific profit and sales goals while optimizing the use of capital and the amount of inventory. The SBU merchandise plan is the tool that relates profit objectives to merchandise planning. It has the following components:

- The twelve-month merchandise plan, consisting of two six-month merchandise plans.
- The assortment plan, to create a balanced merchandise mix.
- The vendor matrix (list of major vendors) used in procuring the right merchandise mix.
- The pricing strategy.
- The product delivery and markdown schedules.
- The open-to-buy plan (budget for future purchases of inventory), at both cost and retail.

The Focus of Part 3

The remainder of this course focuses on development of the **six-month merchandise plan**. It does not discuss the assortment plan or the vendor matrix.

The Retail Year

The retail year is divided into two six-month periods (seasons)—spring (the spring and summer seasons) and fall (the fall, winter, and holiday seasons), and each season is divided into two three-month quarters.

The retail year is not based on a calendar year. Rather, it begins in February and ends in January of the next calendar year:

- The **spring season** runs from February through July:
  - » First quarter: February, March, April
  - » Second quarter: May, June, July
- The **fall season** runs from August through January:
  - » Third quarter: August, September, October
  - » Fourth quarter: November, December, January

The Retail Calendar

The retail months do not correspond strictly to calendar months. Instead, the retail calendar is a **4-5-4 calendar**, which divides the year into 4-week and 5-week months. Thus, each quarter consists of a 4-week month, a 5-week month and a 4-week month, for a total of 26 weeks per season. This calendar ensures comparability between retail years, by aligning holidays and days of the week. (Because the 4-5-4 calendar consists of 364 days, an extra retail reporting week is added every five or six years.)

The Six-Month Merchandise Plan

For each of the two major fashion seasons, the buyer develops a six-month merchandise plan (also known as a "dollar plan" or a "buy plan") to drive the business of the SBU. The six-month merchandise plan serves as the following things:

- A budget that controls the retailer's merchandising activities.
- A blueprint, map, or guide to help the retailer attain realistic retail objectives and sales goals.
- A projection in retail dollars of the amount of merchandise needed to achieve the planned sales goals.
- A merchandising tool that coordinates sales, inventory levels, purchases, markdowns, initial markup, gross margin, and turnover.
- A means to measure the effectiveness of the buying process by comparing planned and actual figures.
- A plan for the future that can be reviewed and revised or adjusted throughout the season.
- An organized guide for the retailer's day-to-day merchandising activities.

The Importance of the Six-Month Merchandise Plan

The six-month merchandise plan is one of the retailer's most important planning tools, and constant monitoring of the plan is a major factor in the retailer's success and profitability. An astute buyer continually collects both internal and external information throughout the year that will impact the development of the merchandise plan.

Part 3, Section 1.2
The Three-Stage Development Process

The six-month merchandise plan has three stages of development: (1) preplanning, (2) information collection, and (3) calculation.

Preplanning

Preplanning consists of conducting an **environmental scan**—an analysis of internal and external factors affecting the business environment. Top retail management personnel conduct this scan before developing strategic plans and P&L statements, and the retail buyer also must scan the environment before creating the six-month merchandise plan.

Environmental scanning is conducted throughout the year. Constantly gathering information, both domestic and international, about the state of the industry, and analyzing internal store happenings and operational procedures and activities, the buyer uses this information in developing a workable merchandise budget.

External Factors

The retail buyer must identify external factors that affect the retail business environment, and their impact. Many external factors beyond the retailer's control affect how the retailer conducts day-to-day business operations. Some of these include cultural barometers or sociological and psychological trends and governmental policies, both domestically and globally. These factors all affect, in some manner, the development of the merchandise plan, and they influence the buying patterns and purchasing power of the target consumer.

Economic trends are one of the most important factors, affecting both the cost of the product and the buying power of the target consumer. Therefore, the astute buyer must keep a close watch on the cost of goods, as well as the department's daily sales patterns.

Other external factors that must be tracked are technological and natural environmental factors affecting the industry. The retail buyer must also develop insight into the demographics, psychographics, lifestyles, and life stages of the store's target consumers, as well as their changing buying patterns and behavior.

Internal Factors

One of the most important internal factors is the **retail store image.** The retailer must establish and maintain a clear, concise store and fashion image, and the buyer must constantly monitor to ensure that the target consumer perceives the image as it was intended.

The buyer must persistently analyze the **buying-selling process** (all business procedures, beginning with financial planning and ending with final sale to target consumer) as it relates to the **product life cycle** of the merchandise assortment. Tracking the daily sales of a product with regard to the product life cycle gives the buyer the information to develop the most effective vendor matrix for the store's particular geographic location.

In addition, the buyer must constantly monitor the competition's merchandising activities and the store's own sales promotional activities and marketing strategies. Finally, the latest fashion trends (i.e., themes, styles, colors, fabrics, product classifications) must be identified, as well as the trends relevant to the store's target consumers.

The Importance of Ongoing Environmental Scanning

The process of keeping records of the internal and external factors affecting the retail store is an ongoing responsibility for the buyer. If the buyer misses a major cue, the impact on the merchandise planning can be disastrous to the retailer's bottom line.

Information Collection

In the information collection stage, the buyer collects numerical data that will be used in the calculation stage.

Information Collected for Existing Stores or Departments

A buyer developing a merchandise plan for an existing store will analyze the actual sales figures for the same season of the previous year and will identify selling patterns, monthly sales distribution patterns, and peaks and valleys in the buying-selling process. The buyer will also compare the markdown percentage with the annual sales volume, and analyze the monthly distribution pattern of markdowns. Purchases, delivery patterns, stock/sales ratios, and turnover also will be analyzed.

The buyer will be looking for the atypical, for special promotions held only once, and for community and holiday events that impacted sales, markdowns, and purchase patterns in the same season of the previous year. Most retail establishments track the weather, and even their competitors' special promotions and advertisements.

Many retailers maintain an advertising and special events calendar that identifies the most and least successful sales promotion activities of the previous year, including the effects of holidays. Changing market and economic conditions also are monitored, as they affect planning of the future merchandise budget.

Information Collected for New Stores or Departments

If the buyer is planning for a new store or department opening, no historical records will be available on which to base the merchandise plan. Trade associations and other business resources (e.g., banks, financial firms, marketing organizations) provide information about expected sales relative to the size and location of a store. For example, the National Retail Federation collects data from retail stores located throughout the United States and is an excellent resource for the new store owner. The buyer of a new store can use these figures as "educated estimates" for predicting sales.

However, these figures are usually averages for various types of retail stores, and are not sales figures for any one store in any particular geographic region. Therefore, the retailer must adapt this information to a specific store type in a specific geographical location for specific target consumers.

Calculation

The third and last stage in developing the six-month merchandise plan is calculation. The following major elements of the merchandise budget must be calculated:

- planned sales
- planned markdowns
- projected inventory (BOM and EOM stock)
- planned purchases
- stock/sales ratio
- average inventory and turnover

All merchandise plans begin with calculation of the total planned sales for the season, since all other budget elements are based on the planned sales figure. Therefore, it is of utmost importance that the total planned sales figure is realistic and attainable. Total planned markdowns also are calculated at this time.

After planned sales and markdowns are calculated, based on previous sales and markdown patterns, the buyer will need to determine the monthly distribution patterns of the planned sales and planned markdowns. Then, inventory levels can be determined based on the stock/sales ratio, and planned purchases can be calculated. The last calculation is to determine the open-to-buy at cost or wholesale, so that the buyer will know what dollar amounts of merchandise can be purchased on market trips.

The Seven-Step Calculation Procedure

1. Calculate total **planned sales** and total **planned markdowns.**
2. Calculate **monthly distribution of planned sales.**
3. Calculate **monthly distribution of planned markdowns.**
4. Calculate **beginning-of-month** (BOM) stock for each month.
5. Calculate **end-of-month** (EOM) stock for each month.
6. Calculate **planned purchases at retail** for each month.
7. Calculate **open-to-buy** (planned purchases at wholesale cost) for each month.

Part 3, Section 2
The Environmental Scan

Part 3, Section 2.1
Introduction to the Environmental Scan

The first stage in developing the six-month merchandise plan is preplanning, which consists of the environmental scan. The environmental scan is a continuous process of gathering information about the environment in which the retailer is operating. It provides the foundation for making critical decisions in calculating the merchandise plan.

As discussed in Section 1.2, the environmental scan analyzes the types of external and internal factors listed below.

External Factors

- The **macro environment**—the economic, cultural, political, governmental, technological, and natural environments in which the business operates.
- The **micro environment**—the company and its employees and management, suppliers, marketing intermediaries, competitors, and target consumers, and other groups, such as government agencies and community groups.

Internal Factors

- The **buying-selling process**—analyzing all of the department's information and happenings during the same season of the previous year; and evaluating, anticipating, and forecasting fashion trends.

Environmental Factors the Buyer Must Research and Evaluate

- The cultural environment.
- The state of the industry, especially the retail and wholesale segments.
- Marketing, advertising, and visual merchandising trends.
- What is happening in the lives of the store's target consumers.
- What is happening in the operations of the store's competitors.
- New trends and innovations in the fashion industry, especially in the product classifications to be procured.

Part 3, Section 2.2
Macro Trends Affecting the Marketplace

The macroenvironment consists of the following factors:

- cultural barometers (sociological and psychological factors)
- economic indicators
- political and governmental influences
- technological developments
- the natural environment

Cultural Barometers

Cultural barometers surround the retailer and the retailer's target consumer and are constantly evolving. These cultural elements include sociological and psychological factors that shape the society in which the consumer lives and the retailer operates. Some changes develop and emerge rapidly, while others evolve slowly; some are very obvious, while others are more subtle.

Sociological Factors that Affect the Marketplace

Sociological factors include characteristics of a population and shifts in those characteristics. The population's age, geographic location, family unit composition, income, education level, and ethnicity are all factors that impact the retailer's merchandise planning. For example, the populations in the United States, Japan, and Germany are aging or graying, while Mexico's population is younger.

Generational Factors

In the United States, most marketers classify the population by generations: children, tweens, teens, Gen Z (or zoomers), Gen Y (or millennials), Gen X, baby boomers, and mature market (a broad category often defined as age 55 or older). Generational marketing takes into account generational differences in behavior and expectations, which reflect consumers' needs and concerns at different life stages—and, just as importantly, differences among the cohorts' shared experiences, as a result of changing cultural, sociopolitical, and technological developments over the decades.

It is important to recognize that as each "generation" ages, it does not simply acquire the characteristics of the preceeding generation. For example, baby boomers have been redefining and diversifying the "mature market"; they have tended to retire later than their parents did, and their tastes and preferences have been formed by their unique shared experiences as youths and younger adults. Increasingly, **gerontographic** analysis is being used to better understand the increasingly non-homogeneous "mature market."

A general trend differentiating the generations has been the development and adoption of digital technology. Gen Xers (born 1965 to 1980) are more comfortable than boomers with digital technology, though less immersed in social media and more comfortable with traditional

The Impact of Baby Boomers

For over half a century, retailers targeted baby boomers — the population segment born between 1946 and 1964. This population changed the retailer's business climate. Boomers were the first generation that used brand names to determine product status and quality. They also demanded innovative product categories to accommodate active lifestyles.

media than are the younger generations. Millennials (Gen Y, born 1981 to 1996), the first generation to grow up with digital media, value word of mouth, user-generated content, and omnichannel retail experiences (see Technological Factors, below). Members of Gen Z (born from 1997 into the early 2000s) rely more on social media than any previous generation and are most susceptible to social selling techniques. The generations differ in size and in such traits as brand loyalty, practicality, attention to cost and customer service, social and environmental consciousness, and nostalgia.

Geographical Factors

The population composition differs among U.S. geographical regions. Some regions have many older people but relatively few children, while young families tend to reside in areas offering opportunities and amenities not needed or demanded by seniors. Consumer buying patterns in these areas are different, since young families have different product and marketing preferences, as well as different values and attitudes towards purchasing.

Family Composition

Family composition has changed. The diverse racial makeup and ethnicity of the current U.S. population has combined with the emergence of different family compositions to establish a new norm. Changing family composition signifies the influence of a younger generation on the marketplace. This younger generation's use of technology and knowledge of the global market environment have changed marketing and merchandising rules.

Psychological Factors

Psychological factors encompass the values, attitudes, ideas, interests, opinions, and mores of a consumer segment. They are learned from a person's family unit, community, and religious and political organizations within a geographic region, the country, or the global community. Identifying the **psychographics** of a population assists the buyer in selecting products, marketing them to the consumer, and motivating the consumer to buy.

The Importance of Psychographics

Values, attitudes, and ideas affect how consumers think, what they believe, and how they react to other people, happenings, products, services, or marketing messages. Thus, religious affiliations, educational institutions, political organizations, and other organized groups, clubs, or associations flavor the consumer's tastes and spending patterns.

Economic Indicators

One of the most important macroenvironmental forces influencing the consumer and the business environment is the regional economic climate. Such economic indicators as the stock market, the gross domestic product, interest rates, unemployment rates, savings and borrowing patterns, income growth, building and infrastructure growth, manufacturing indexes, and tax rates affect not only the business environment but also consumer confidence in the state of the economy, and thus consumer behavior.

Examples of the Effects of Economic Factors on Retailers

- High interest rates may hamper business expansion, while also reducing the consumer's discretionary income available for purchasing products beyond the necessities for daily living.
- Changes in income distribution have caused the U.S. middle class to shrink, reducing discretionary income.

Manufacturing indexes and cost of raw materials are important indicators of the wellbeing of many industry segments. For example, the cost of cotton, the availability of cotton fiber, or the locations where cotton is produced can affect the price, shipping cost, or even the availability of a cotton product.

Political and Governmental Influences

Other important elements affecting the business environment include political forces and the laws and regulations governing how business is conducted. Understanding the laws that govern business transactions (domestically and internationally), knowing how trade regulations affect sourcing of merchandise, and understanding what consumers expect of the retailer regarding globally sourced goods (e.g., protection of human rights in the workplace) are only a few aspects of understanding how political and governmental factors affect the retail environment.

Other examples of factors to be tracked include decisions on waging wars, passing fair trade laws, and regulating competition in the marketplace. Furthermore, the retailer must be aware of laws and regulations concerning advertising, use of credit, product safety, environmental protection, and packaging and labeling, which affect business operations.

Technological Factors

Technology has been responsible for major changes in retailing, dramatically affecting the following actitivies:

- Where consumers shop.
- How sales transactions are handled.
- How merchandise moves from the retailer to the consumer.
- How goods are moved from the vendor to the retailer.
- How the retailer tracks inventory.

Online shopping has exploded, flash sales are prevalent, and hashtags and radio frequency identification codes are commonplace. Advanced technology has greatly enhanced the abilities of

- consumers to comparison shop,
- companies to collect consumer information or input for product design and development of merchandise, and
- marketers to reach consumers worldwide, instead of in just one region or country.

Consumers now expect retailers to smoothly integrate their brick-and-mortar operations with their online operations, providing a range of choices in how to interact with the retailer at every stage of shopping and purchasing—an **omnichannel** approach. For example, consumers may learn of products from social media, research the products online, and make purchases in-store or via their laptops or mobile devices. They expect convenient payment options and choices of in-store or curbside pickup, same-day local delivery, or shipment (with options for free or expedited shipping). They expect to be able to make returns in-store or to to ship them, preferably with labels provided by the retailer. And they expect to be able to leave online reviews, which they may also depend on in making purchase decisions. Omnichannel retailing increases the challenges in giving customers a personalized experience.

The Natural Environment

The environmental scan must consider the natural environment in which the retailer resides and the manufacturer produces merchandise. The effects of human activities on the natural environment—air, water, land, plants, animals, and humans—has become a major focus of both businesses and consumers. From the design process, to dyeing and finishing of fabrications, to packaging and shipping, to waste disposal, to heating and lighting—the textile, apparel, and retail industries have made major efforts to "go green" and become more sustainable, to preserve the natural environment.

Sources for Tracking Information on the Macroenvironment

The buyer may track information on external factors from many sources. Bankers, financial companies, marketing agencies, and industry publications have extensive up-to-date information on current trends in the industry and the global marketplace.

Some Key Sources for the Environmenal Scan

- W*oman's Wear Daily* is an excellent source for the ladies' and men's apparel buyer.
- *Earnshaw's* is an informative publication for the children's wear industry.
- Cotton Incorporated's *Lifestyle Monitor*™ survey is an excellent source for current information on all factors in the environmental scan.
- Among numerous other organizations that track the retail environment, the National Retail Federation and National Consumer Panel compile information and research on the business environment, especially in the United States.

Part 3, Section 2.3
Micro Trends, Emphasizing the Consumer

The microenvironment consists of the following elements:

- the company
- its suppliers
- marketing intermediaries
- other groups impacting business
- employees and management
- competitors
- target consumers

The buyer must constantly track all of these factors, which all affect, to some degree, decisions in creating a profitable six-month merchandise plan. The more the buyer knows about these factors, the easier it is to create an attainable plan that meets sales, margin, and profit goals for the store.

The Company

The scan of microenvironmental factors begins with observing what is happening in the company itself, especially top management's philosophy and direction. Since executive management approves or sometimes sets the parameters for the business operations, buyers must consider all happenings in the store and then determine what impact they may have on the buyer's department or product classifications.

The Buyer Must Work With All Company Divisions

The buyer must develop working relationships with personnel in all divisions and determine how the divisions' activities will affect the six-month merchandise plan.

Executive Management

Executive management must ensure that all employees have the same concept of the store image, the target consumer, and the merchandising and management philosophy, as well as the store's marketing strategy. The buyer must understand how to work with executive management and store management in order to achieve the highest gross margin and profit for the department. For example, if management must eliminate job positions or trim employee hours in order to meet payroll, the buyer must determine how this will affect the functioning of the department and its sales volume.

Sales Promotion

Buyers always want to work closely with the sales promotion division (i.e., advertising, visual merchandising, special events and promotions, fashion training, publicity) in order to make

decisions about the marketing of their products—such as media type, how many spots to be purchased, and when to schedule them. Buyers should ask questions such as these:

- What products will be displayed when and in what locations in the department?
- What new shop concept will be added to the division?
- What types of special events will be held, when, and where? And what activities will be most profitable for the department?

Finance

The Finance Division compiles and confirms sales, markdowns, shrinkage, and other figures that the buyer needs in order to calculate the six-month merchandise plan. It behooves the buyer to develop a good relationship with this division and to make use of the monthly information from the division in order to ensure profitability.

Human Resources

In many stores or store organizations, the buyer must interact with Human Resources in order to ensure that all department employees are aware of their benefits and are following all rules and regulations in order to ensure the safety of both employees and consumers.

Store Image

Retail store management must establish a transparent store image—to influence how the target consumer perceives the store, and that consumer's actions.

The store image reflects general attributes or store cues, such as the store's history and geographic location. It also reflects physical attributes, such as the exterior environment, exterior and interior décor, and the tenant mix at the retailer's location. Other cues affecting how the target consumer perceives the store are the channel of distribution in which the store operates, the availability of personnel to provide customer services, and the types of services offered. Consumer perception of the store's image is also affected by marketing communications and promotions.

Two of the most important aspects store image are under the buyer's direct control:

- Product attributes, such as the vendors, merchandise mix, brands carried, and exclusivity and positioning of the merchandise.
- Pricing of the merchandise.

The buyer can directly control these attributes, helping to maintain a consistent fashion and store image. Functioning as a team member, the buyer must identify any store image problems that help or hinder meeting the planned sales goals and margins.

Suppliers

Another major responsibility of the buyer is to develop good working relationships with the company's suppliers, especially the vendors supplying the department's merchandise. Major retail organizations create a vendor matrix listing the major vendors from which the buyer purchases merchandise. A top listing of vendors is usually identified for each department or product classification. The listing is based the vendors' performance evaluations for specific types of goods.

When selecting a vendor, the buyer must develop a "report card" consisting of the most important criteria for the specific store or product classification. Many retailers follow the 80/20 rule—identifying the top 20 vendors who produce 80% of the department's sales. Because the number of vendors for any one classification usually is limited, adding a new vendor is to the listing means dropping an existing vendor.

Marketing Intermediaries

The retailer must also interact with marketing intermediaries—businesses that facilitate the movement, marketing, promotion, and sales of the retailer's merchandise, such as the following:

- Physical distribution firms, such as trucking companies or warehouse owners.
- Financial companies, such as banks, credit-card companies, and insurance agencies.
- Marketing firms, such as market research companies, consulting businesses, and advertising and special promotions companies.

Physical Distribution Firms

Physical distribution firms deliver the merchandise either to the retailer's distribution centers or directly to the store. If poor organization results in the goods' remaining in transit or at the retailer's distribution center for an extended period, the retailer can lose sales and incur heavy markdowns due to the goods' reduced availability during the peak selling period.

Financial Companies

When retailers are unable to meet the store's operational costs, they are forced to borrow money from banks, paying interest on that money until they can repay the loan. Also, since consumers use credit cards to make many retail transactions, the retailer must negotiate fees with the credit card companies. These transactions are costly, so the retailer must develop partnerships with financial organizations in order to ensure profitability.

Marketing Firms

Retailers may hire advertising firms and special-event organizations to market their stores and products. Many also seek out consulting and research firms to assist with problem solving or find the information needed to support wise business decisions. Furthermore, building good relationships with media outlets (newspapers, magazines, radio, television, and internet) is mandatory for the successful retailer.

Other Groups

The retailer's merchandise planning may also be influenced by the following types of groups:

- Government agencies that oversee and regulate issues such as product safety, advertising, and pricing policies.
- Consumer organizations, which promote consumers' interests by disseminating information on issues such as product safety, claims, and labelling.
- Environmental groups, which are concerned about the environmental impacts of production, manufacture, sales, and disposal of various products.
- Concerned citizen and community groups, who may oppose construction of stores in their locales because they believe it is not in the community's best interest.

Competitors

Retailers must consciously position and differentiate their stores and merchandise assortments from those of their competitors. Towards this end, the buyer must do these things:

- Search for vendors offering the retailer exclusive product distribution in that particular region.
- Continually conduct competitive product analyses, to ensure that the store's merchandise provides more value and satisfaction to the target consumer than does that of its competitors.

Competitors are sometimes difficult to identify. Consumers may weigh their purchases among products in different classifications. For example, in some holiday seasons, consumers buy more electronics than clothing, or vice versa. Furthermore, advanced technology and market globalization now enable consumers to purchase products from all over the world.

The Target Consumer

It is critically important for the retailer to identify the target consumer market for which the store can provide a value offering that rivals that of the competition, while realizing a profit. The store type, store image, geographic location, and product offering are major factors the retailer must consider when identifying the store's target market.

Understanding the Target Consumer

Wise retailers ensure that they identify all target consumer segments in their geographic locations, and that they understand the demographics, psychographics, cultural behavior, life stages, and lifestyles driving their purchases. Retailers must keep abreast of all happenings that impact the buying power and spending patterns of the major consumer segments.

To collect information on a specific department's or store's target consumers, the buyer may drive through the neighborhoods where they live, to observe the housing and landscaping, the types of cars in the driveways, and the types of recreational equipment in the yards. The buyer may attend community events or join community organizations in order to become familiar with the target consumers, the products they purchase, and their buying patterns.

Buyers working for large organizations will need to research regional characteristics of the target consumer population, such as age distribution, gender composition, and population density. The buyer might also research the regional economic climate and determine how these factors affect buying patterns and consumer confidence.

Life Stages and Lifestyle

The buyer must also investigate the target consumers' life stages and lifestyles, to determine what product categories and merchandise mix are needed to meet their desires and demands. Does the region have concentrations of young families with children? Retirement communities? Universities or colleges? What are the major leisure activities in the area, and what sporting events and cultural opportunities are available?

Part 3, Section 2.4
The Buying–Selling Process

In addition to analyzing the macroenvironment, the retail buyer must carry out day-to-day departmental management duties:

- Planning and evaluation in order to develop the six-month merchandise budget.
- Procuring merchandise.
- Promoting merchandise.
- Merchandising the department.
- Supervising personnel.
- Managing the department.

Generally, all buyers are responsible for planning and evaluating, procuring merchandise, and assisting in promoting merchandise. However, buyers who work in group or corporate offices may not be responsible for merchandising the department, supervising personnel, or managing the department or store. This course covers only planning and evaluating, procuring merchandise, promoting merchandise, and merchandising the department.

The Retail Buyer Must Multitask

The buyer's duties are not sequential, but overlap in time. For example, a buyer may be involved in all of these activities simultaneously:

- Tracking sales figures and submitting reorders for spring/summer merchandise.
- Assisting in creating advertisements and special events for the back-to-school season.
- Scheduling a market trip.
- Traveling to procure merchandise for the fall/winter season.
- Developing and calculating the six-month merchandise plan for the upcoming spring/summer season.

Planning and Evaluation: Analyzing Fashion Trends

One of the buyer's major responsibilities in the planning and evaluation process is analyzing actual information and happenings to provide a foundation for creating the next six-month merchandise plan (also known as a "merchandising" or "buy" plan). The buyer analyzes the departmental six-month merchandise plan for the same season of the previous year and uses the findings to estimate planned figures for the upcoming season that are realistic and attainable. The planned six-month merchandise budget is then calculated for approval by management. The steps in conducting an analysis of numerical data are discussed in Part 3, Section 3.1.

The other major duty in this stage is evaluating, anticipating, and forecasting fashion trends to meet the target consumer's demands and desires. Although the retail buyer is exposed to

innovative fashion trends through the media, at market, and by the store's major vendors, many of those trends will not be appropriate for the store's target consumer, the geographical location of the store, or the store's fashion image and store image. The buyer often must select trends that can be adapted to the target consumer's fashion level (the degree of design innovation inherent to the merchandise) and that are saleable in the store's geographic location.

The Buying–Selling Curve

A tool for relating fashion trend information to the merchandising process is the **buying–selling curve** (sometimes called a "trend curve"). This curve relates the following factors to each other:

- product fashion level
- product life cycle
- target consumer
- merchandise type
- inventory level
- buying techniques
- marketing techniques

The buying-selling curve diagram shown on the next page resembles the **product life cycle curve** (from "introduction" to "maturity" to "decline") and the **diffusion of innovations curve,** which illustrates the pattern by which a new product spreads through the population (from "innovators" to the "majority" to "laggards"). However, these curves have been adapted to relate a product's fashion level to the merchandising activities needed to provide the target consumer with the right product at the right time.

For the purpose of analyzing the merchandising of fashion products, the curve has been divided into six stages of fashion level:

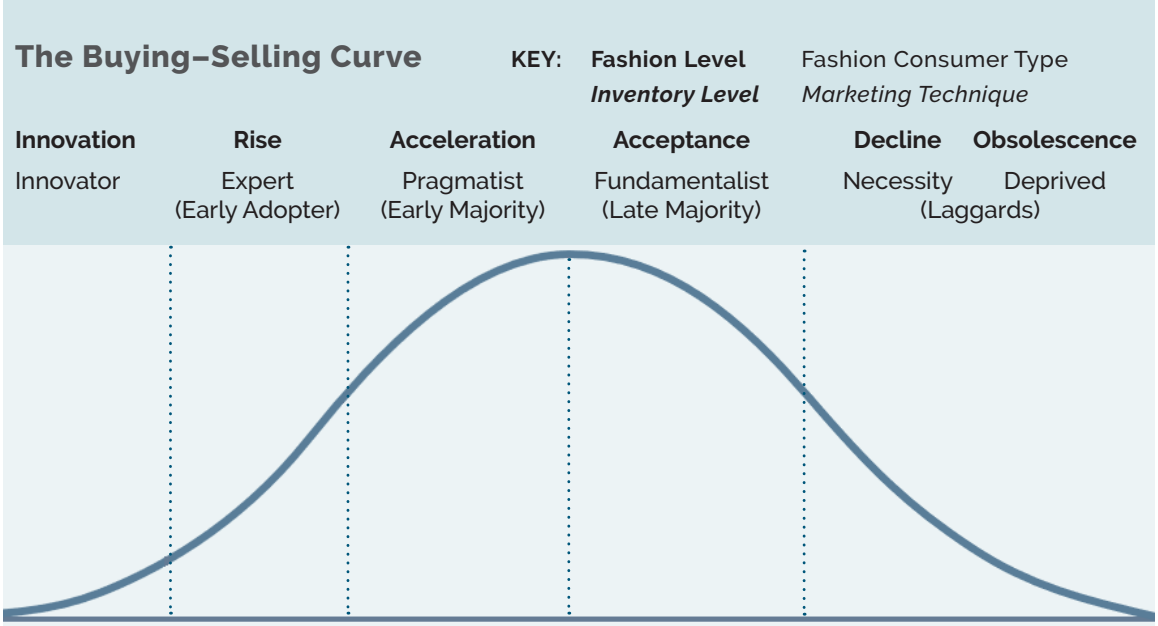
- innovation
- rise
- acceleration
- general acceptance
- decline
- obsolescence

Not all stores carry fashion merchandise at all stages of the curve. However, all fashion merchandise, regardless of the stage at which it is received in the store, gradually travels through the cycle to eventually become obsolete.

Innovation

The haute couture or designer fashion product originates as an innovation and is usually a one-of-a-kind designer product. As exquisite, high-priced merchandise, this product is usually offered to the **fashion innovator,** or trend setter, who has a highly developed sense of design along with the income to purchase designer products.

The retail buyer selectively purchases limited sizes and quantities of this merchandise, receives it very early in the buying season, and markets it at the very beginning of the selling season or even before, by informing the target consumer of its availability. The buyer expects higher markdowns at this fashion stage, because of product's design attributes and higher price points.



Adap. from Kincade et al. (2003) Merchandising Math: A Managerial Approach; Rogers (1983) Diffusion of Innovations.

Rise and Acceleration

Many specialty stores carry fashion merchandise in the next two stages, rise and acceleration. The target consumers at these stages are the fashion expert and the fashion pragmatist.

Merchandise in the **rise stage** is trendy, and is viewed as the most up-to-date product available for widespread purchase. These items are offered in a "higher" or "best" price range, are usually of good quality, and are created in the most current or novelty fabrications. The **fashion expert** is aware of the latest fashion trends and purchases the product at the start of the selling season.

In the **acceleration stage,** the trend or style is accepted by a substantial group of consumers, and the price points for the merchandise will more than likely range in the "better" to "best" categories. The **fashion pragmatist** waits until the trend accelerates. This consumer is more practical with regard to the design aspects of the merchandise, and often purchases wardrobe-building pieces that can be incorporated into a current wardrobe or worn for a longer period.

In these two stages, the buyer desires maximum coverage of trendy, fashionable merchandise in a variety of styles, colors, fabrications, and brands. The inventory approaches its peak during the acceleration stage, and the buyer frequently reorders if the demanded product is available for shipping. The marketing technique continues to be alerting the consumer to both the trend and the store's selection of merchandise.

General Acceptance

Once the trend or fashion has been accepted by the general public, it is positioned in the **general acceptance stage.** By this stage in the fashion cycle, all consumers are accustomed to the product; their "fashion eye" has been trained to accept or appreciate the look. The fashion is available in many versions, in all price ranges, sizes, fabrications, and colors, and all store types and departments carry knock-offs or adaptations of the product design. The target consumer at

this stage is the **fashion fundamentalist,** and the retailer's major marketing thrust is to persuade these consumers by offering the product in various sizes, colors, and fabrications at a wide range of price points. In the general acceptance stage, the buyer must closely track sales, to determine when they start to decline.

Decline and Obsolescence

As soon as the demand for the product starts to decline, the buyer must not only strategically discontinue reordering the item, but also determine when to start markdowns in order to realize the most profit, while clearing out the inventory of unwanted merchandise. In the stages of **decline** and **obsolescence,** the merchandise is offered at a marked-down price or is acquired for sale by discount stores, to be purchased by consumers out of **necessity** or because the price is low enough even for **economically deprived consumers.**

Positioning Products on the Buying–Selling Curve

One of the retail buyer's most difficult duties is to determine the positions of products on the buying–selling curve and tracking their progression. Furthermore, upon determining this information, the buyer must translate it into workable knowledge in order to make buying decisions and to determine its impact on the six-month merchandise plan.

The Store's Fashion Image

The positioning of the retail store's fashion product on the buying–selling curve assists the retailer in establishing the store's fashion image. Based on that positioning, the consumer can translate the fashion level of the retailer into the expected quality and brands of the merchandise, as well as the price ranges.

Procuring Merchandise

Another step in the buying-selling process is searching for and selecting the "right merchandise," in the right colors, sizes, and styles.

Searching for Merchandise

Retail buyers have a choice of locations and techniques for identifying the merchandise mix, and they may rely on any or all of these:

- The buyer might travel to fashion centers or garment districts domestically or abroad, to visit designers' and manufacturers' showrooms.
- The buyer might visit regional marts housing the showrooms of manufacturers and brands.
- Some retailers designate space at corporate headquarters where vendor representatives can show the retail buyer their offerings.
- Some buyers preview the vendors' seasonal lines on the Internet.

Travel is costly and time-consuming, so market trips must be well organized, with vendor appointments made in advance and buying plans approved by management. Market trips may be organized by location, key vendors, or product classifications.

Selecting the Merchandise

Different vendors often offer similar products at different price points or in different styles, fabrications, and colors. The difficult final stage in procuring the merchandise is to select the right products, in the right styles, colors, and sizes, at the right prices, and in the right quantities. The task is easier if the buyer has built a viable vendor matrix and has established seamless working partnerships with those vendors.

Promoting Merchandise

Depending on the retailer's organizational structure, the buyer may or may not play a major role in marketing products. However, all buyers select the trends or products to be promoted and give "voice" to the type of sales promotion most productive for reaching the target consumer.

When procuring merchandise, the buyer makes arrangements with the vendor to secure advertising materials for use during the promotional time sequence. The buyer must also observe the market for ideas about fashion events, special promotions, and other events most appropriate for marketing the brand, trend, and product. Creating excitement and "retailtainment" are major responsibilities of the buyer.

One of the most important aspects of marketing products is visual merchandising (i.e., the integration of merchandise presentation and display). Buyers may have the opportunity to work with vendors in order to build (within the department or store) shop concepts featuring the vendor's merchandise mix, complete with fixturing, displays, and signage. The buyer may also assist in developing a planogram (a schematic plan) for displaying the merchandise in order to create impulse buys or add-on sales.

Merchandising the Department

Again depending on the retailer's organizational structure, the buyer may play a major role in merchandising of the store or department. For example, the buyer might select the product classification to be displayed or suggest new types of fixturing, visual aids in the shop concept, or new locations for positioning lucrative outposts (i.e., freestanding selling units stocked with merchandise and sold elsewhere within the store).

Key Questions in Evaluating the Buying and Selling Process

- What major decisions about estimating and budgeting for the season need to be revised in order to realize planned sales or increased profit?
- What trends were missed?
- Which trends will carry over to the upcoming season?
- Which vendors performed best?
- What products were missing or could not be reordered?
- Which major marketing and merchandising techniques produced the desired results?
- Which marketing and merchandising techniques did not work?

Part 3, Section 3
Collection of Numerical Data

Part 3, Section 3.1
Analysis of the Previous Six-Month Plan

The second stage in developing the six-month merchandise plan is to collect the numerical data that provide the basis for calculating the new plan. For an existing store or department, the buyer will study the actual figures for the same season of the previous year.

However, if the store or department is a new unit with no previous history, the buyer will research statistical averages provided by the National Retail Federation (NRF), the *Johnson Redbook Index*, or other financial institutions, shopping-center organizations, or business services such as Standard & Poor's or Moody's Investors Service. Of course, since these figures are averages, they must be adapted to the store's type, merchandise classification, and geographic location.

The Role of Data Collection and Analysis

In developing the planned merchandise budget, buyers must

- collect a significant amount of information,
- analyze data from the previous season, and
- use intuition and experience from previous store happenings in order to create a realistic and attainable budget for the department or store.

Using actual data to calculate the six-month merchandise plan best prepares the buyer to develop a workable budget that is realistic and attainable. However, the buyer must be careful not to repeat any mistakes made the previous year. Therefore, it is important to consider all factors that affect the business and budget at the current time, including the environmental scan.

Rounding and Reporting of Figures in the Plan

The figures in the six-month merchandise plan are reported rounded to the nearest $10, with the decimal point placed between the thousands and hundreds (instead of between the ones and tenths). Here are some examples:

$203,856.45 is written as $203.86

$56,102.79 is written as $56.10

$5,942.00 is written as $5.94

$225,000.00 is written as $225.00

$8,908.04 is written as $8.91

This section investigates each component of the six-month merchandise plan by analyzing the figures from an actual six-month merchandise plan for a fashion department as an example.

Example Six-Month Merchandise Plan

As discussed in Part 3, Section 1.2, the six-month merchandise plan includes at least the following major elements:

- Total planned sales and total planned markdowns.
- Monthly distributions of planned sales and planned markdowns.
- BOM and EOM inventory for each month.
- Planned purchases at retail for each month.
- Open-to-buy (planned purchases at cost) for each month.

The elements included in six-month merchandise plans and the order in which they are listed vary among retailers. In the example six-month plan shown on the next page, the elements are listed in the order in which they are discussed in this course. Six-month plans typically also include space to enter revised and actual figures as the season progresses; these are omitted from this simplified example to save space. Plans may also include percentage changes in sales and markdowns from last year to the current year, and they typically identify the department, manager, buyer, and six-month period.

In example six-month merchandise plan shown on the next page, last year's figures are filled in as the starting point for developing a plan for the new six-month season (as calculated in Section 4). The following sections review the elements of the six-month plan, to build a logical foundation for calculating the plan for the new season.

The reader may wish to print out the page with the example six-month merchandise plan, as its figures are used in the examples in the following sections.

Example Six-Month Merchandise Plan Showing Last Year's Figures

	Feb	Mar	Apr	May	Jun	Jul	Season	Aug*
Sales $ LY	$33.75	$45.00	$42.75	$29.25	$31.50	$42.74	**$225.00**	$42.00
$ Plan								
% LY	15%	20%	19%	13%	14%	19%	100%	
% Plan								
Markdown $ LY	$5.94	$6.93	$5.94	$8.91	$9.90	$11.88	**$49.50**	
$ Plan								
% LY	2.64%	3.08%	2.64%	3.96%	4.40%	5.28%	22.00%	
% Plan								
BOM Stock $ LY	$149.85	$164.25	$168.44	$152.98	$137.66	$134.66	**$148.59**	$132.30
$ Plan								
EOM Stock $ LY	$164.25	$168.44	$152.98	$137.66	$134.66	$132.30		
$ Plan								
S/S Ratio LY	4.44	3.65	3.94	5.23	4.37	3.15	1.51 Turn**	3.15
Plan								
Purchases $ LY	$54.09	$56.12	$33.23	$22.84	$38.40	$52.26	**$256.94**	
$ Plan								
OTB Cost $ Plan								

*Figures from the merchandise plan for the following fall season.
**Stock turnover.
Adap. from Kincade et al. (2003) Merchandising Math: A Managerial Approach

Notes on the above figures:

- Total sales for the season have been rounded to the nearest thousand dollars.
- Actual sales decreased by 10% from the same season of the previous year,
- Actual purchases increased by 13% from the same season of the previous year.
- Actual markdowns increased by 2%, from 20% to 22% of total sales.
- The Easter holiday affects sales in this department; Easter was on March 31.

Part 3, Section 3.2
Total Sales and Total Markdowns

Total Planned Sales

All merchandise budgets begin with total planned sales, and all other components of the budget are based on the planned sales figure. It is therefore of utmost importance that the total planned sales figure be realistic and attainable.

Analyzing Sales Data

When analyzing the spring merchandise sales for the previous year, the buyer should look for the following information:

- The monthly distribution of sales (the percentage of total sales attributable to each month) and the peaks and valleys in month-to-month sales.
- Atypical happenings, such as special promotions, community happenings, or one-of-a-kind circumstances or sales during the previous year.
- Special circumstances that affected sales volume, such as unusual weather conditions, changing market conditions, economic downturns, or the competition's events.
- The timing of holidays and how they affected sales overall or in particular product classifications, or how important they were to the target consumer.
- The beginning inventory status, with respect to the relative amounts of older, marked-down merchandise versus new, trendy arrivals.

The buyer also needs to look at the **total annual sales volume over a five-year period,** calculating the percentage increase or decrease each year, in order to discern any pattern. In addition, the buyer should schedule a conference with management to discuss management expectations and plans for any remodeling or any new use of floor space. Furthermore, using current financial information from various retail and financial organizations, the buyer should evaluate annual retail sales volumes throughout the United States for similar stores or departments or those carrying similar product categories.

Calculating Percent Change in Sales Volume

The following formula is used to calculate the percent increase or decrease in sales volume:

% Change = (This Year's Sales $ – Last Year's Sales $) ÷ Last Year's Sales $

Use the formula above and the following figures to calculate the change in sales volume as a percentage. In this example, it is an increase, but it could be a decrease.

Calculate the Increase in Sales Volume as a Percentage

This Year's Sales = $258.75
Last Year's Sales = $225.00

% Increase = (This Year's Sales $ – Last Year's Sales $) ÷ Last Year's Sales $
= ($258.75 – $225.00) ÷ $225.00
= $33.75 ÷ $225.00
= 15%

Total Planned Markdowns

The next step is to calculate markdowns as a percentage of the total sales volume. Markdowns must be included in the plan, as they are a fact of life for retailers, and are a part of doing business. As discussed previously, markdown amounts are a guide, not a goal.

Markdown percentages vary among stores, departments, product classifications, geographic regions, and competitors. Markdowns are best used in such as way to ensure that a product sells quickly and at a profit. Because markdowns are a drain on margins and profit, they are best kept to as low a percentage as possible for them to be effective.

Reductions in the Example Six-Month Merchandise Plan

In the six-month merchandise plan, some retailers include only markdowns, while others include markdowns plus shrinkage (reductions), either separately or combined. The example six-month merchandise plan for this course shows only markdowns, not shrinkage.

Analyzing Data on Markdowns

The buyer should examine the previous year's total markdowns and analyze the following factors affecting markdowns:

- The general economic business climate during the six-month period.
- The amount of old stock on hand at the beginning and end of the period.
- Dates throughout the season when the target consumer expected markdowns.
- Special events, promotions, holidays, and unique happenings that demanded markdowns.
- Weather conditions and political events that affected markdowns.

Calculating Markdowns as a Percentage of Total Sales

The following formula is used to calculate total reductions as a percentage of sales volume:

Total Markdown % = Total Markdown $ ÷ Total Sales $

Use the formula above and the figures from the example six-month merchandise plan to calculate total markdowns as a percentage.

Calculate Total Markdowns as a Percentage of Total Sales

Total Markdowns = $49.50
Total Sales = $225.00

Total Markdown % = Total Markdown $ ÷ Total Sales $
= $49.50 ÷ $225.00
= 22.00%

Part 3, Section 3.3
Monthly Distribution of Sales

Sales volume varies from year to year, season to season, and month to month. For example, some retailers realize 40% to 45% of their annual sales in the first six-month period (February through July) and 55% to 60% in the second six-month period (August through January of the next year). Season, weather patterns, store type, merchandise classifications, and geographic location affect a retailer's monthly distribution of sales.

Calculating the Monthly Sales Percentages

The six-month merchandise plan breaks down sales volume for the season by month. The following formula is used to calculate monthly sales as a percentage of total sales for the season:

Monthly Sales % = Monthly Total Sales $ ÷ Total Sales $

Use the formula above and the figures from the example six-month merchandise plan to calculate February sales as a percentage of total sales.

Calculate Monthly Sales as a Percentage of Total Sales

Total February Sales = $33.75
Total Sales = $225.00

February Sales % = February Total $ ÷ Total Sales $
= $33.75 ÷ $225.00
= 15%

Analyzing the Actual Six-Month Figures

In the example six-month merchandise plan (Section 3.1), the lowest sales volumes were recorded in February and May, with 15% of the total sales being recorded in February and only 13% in May. The May figure is atypical; NRF statistics indicate that sales volume usually is larger in May than in either April or February. For one thing, February has fewer days than May. It also falls at the beginning of the spring season, with a merchandise assortment that mixes reduced fall and holiday merchandise with new spring and summer arrivals. February also usually brings adverse weather conditions to many U.S. locations.

Another consideration is where the spring holidays fall on the monthly calendar. For example, if Easter is celebrated in March, then sales volume often is larger in March than April; the opposite occurs if Easter falls in April. Furthermore, consumers expect merchandise to be reduced after the holidays, and they expect summer specials. Other spring holidays potentially affecting both sales and markdowns are Valentine's Day, Presidents' Day, Mother's Day, Memorial Day, Father's Day, and Independence Day, plus back-to-school sales and any other annual store sales (e.g., spring sale or anniversary sale) observed by the store during that period.

Reviewing Sales Volume by Quarters

The buyer may also review the sales volume by quarters. Many stores sell more merchandise in the second quarter than the first quarter. The first quarter of the spring season falls shortly after Hanukkah and Christmas, and many consumers are still paying off credit cards used to purchase holiday gifts. Also, merchandise assortments may be incomplete in February, with major spring shipments not yet received. Finally, since federal income taxes are due on or around April 15, some consumers save a portion of their discretionary income to pay those taxes. All of these factors impact consumer buying patterns.

Part 3, Section 3.4
Monthly Distribution of Markdowns

To use markdowns as an effective merchandising tool, the buyer must examine the previous year's monthly markdown dollar amounts and percentages, considering the following factors:

- The markdown amount needed per month to reach the sales goal for that month.
- The types of special events and promotions planned for a particular month that demand markdowns.
- The position of merchandise in the product life cycle and on the buying–selling curve.
- The time remaining in the selling season.

Calculating the Monthly Markdown Percentages

The following formula is used to calculate monthly markdowns as a percentage of total sales for the season:

Monthly Markdown % = Monthly Markdown $ ÷ Total Sales $

Use the formula above and the figures from the example six-month merchandise plan to calculate February markdowns as a percentage of total sales.

Calculate February Markdowns as a Percentage of Total Sales

Markdowns = $5.94
Total Sales = $225.00

Monthly Markdown % = Markdown $ ÷ Total Sales $
= $5.94 ÷ $225.00
= 2.64%

Analyzing the Actual Six-Month Figures

In the example six-month merchandise plan, markdowns totalled $49,500, or 22% of the total sales, up from 20% for the same season of the previous year. Therefore, the buyer needs to look for problem areas leading to higher markdowns and determine how to correct them for the upcoming year. For example, the buyer might determine which specific product classifications or styles did not sell well, or what external economic factors affected consumer confidence.

In the example plan, markdowns were much higher in the second quarter ($30.69) than in the first quarter ($18.81). This in itself is not unusual. However, the unusually large increase in markdowns in the second quarter could have resulted from delayed markdowns on spring merchandise. The timing and size of markdowns are key to controlling total markdowns. Items not reduced early enough in the first quarter may not have sold at the first markdown price, requiring deeper markdowns in order to sell later. Even though July markdowns are expected in order to rid the stock of leftover seasonal merchandise, the July markdowns in the example six-month plan were very high—5.28% of the total sales for the six-month period.

Part 3, Section 3.5
Inventory: Beginning and End of Month

The BOM stock is the dollar value of the stock the retailer has in the store or department on the first working day of the month. When analyzing stock levels, the buyer considers two statistics: the **stock-to-sales ratio** (S/S ratio) and the **stock turnover** rate.

Stock-to-Sales Ratio

The stock-to-sales ratio relates the value of the stock on hand for the month to the sales for that month. Expressed as a ratio, it is the value of the stock per dollar of merchandise sold. These dollar values, and thus the S/S ratio, are affected by season, merchandise classification, store type, and geographic location.

The following formula is used to calculate monthly S/S ratios:

Monthly S/S Ratio = BOM Stock $ ÷ Monthly Sales $

Use the formula above and the figures from the example six-month merchandise plan to calculate the February S/S ratio.

Calculate the February S/S Ratio

BOM Stock = $149.85
Sales = $33.75

Monthly S/S Ratio = BOM Stock $ ÷ Sales $
= $149.85 ÷ $33.75
= 4.44

Beginning-of-the-Month Stock

If the previous monthly S/S ratios and monthly sales are known, they can be used to calculate the BOM stock:

BOM Stock $ = Monthly Sales $ × Monthly S/S Ratio

Use the formula above and the figures from the example six-month merchandise plan to calculate the dollar value of the February BOM stock.

Calculate the Dollar Value of the February BOM Stock

Sales = $33.75
S/S Ratio = 4.44

BOM Stock $ = Sales $ × S/S Ratio
= $33.75 × 4.44
= $149.85

Stock Turnover

As discussed in Part 2, Section 3.5, the stock turnover is the number of times the average inventory on hand (measured as average retail price) is sold and replaced within a given period. It is calculated by the following formula:

Turnover = Net Sales $ ÷ Average Inventory $

The Importance of Turnover

Turnover measures of the efficiency of the retail operation. To increase turnover, the buyer must either (1) increase sales of the inventory currently in the store or (2) decrease the average amount of inventory while maintaining the same sales level.

Planning Inventory Levels

To create workable turnover, the astute buyer aims for a lean inventory: minimum quantities of stock by size, color, price, and type. If stock sells too quickly, sales are lost; if stock sells too slowly, more and deeper markdowns must be taken. Either situation makes it harder to reach goals for margin and profit.

Limiting BOM stock makes it possible to add new arrivals to the stock throughout the month. The buyer must always reserve dollars for purchasing new items introduced in the market after the initial buys are made. The buyer should also plan delivery dates so that merchandise is coming into the store throughout the month. However, enough merchandise must to be on hand at the beginning of the month for the opening merchandise assortment to cover the volume of sales until vendors ship replacement merchandise.

The Importance of Delivery Dates

The stock must be in the store and available for customer selection before the customer begins selecting and buying the product. Delivery dates are therefore crucial. If promotional sales have already begun by the time merchandise is received, customers may not be willing to buy it at full price.

End-of-the-Month Stock

The EOM stock is the stock on hand on the last business day of the month. It is the same as the BOM stock for the following month.

In the example six-month plan, the ending inventory on April 30 (the last business day of the month) is $152,980.00 ($152.98). When the retailer opens its doors again on May 1 (the first business day of the month), the BOM stock for May is $152,980.00 ($152.98).

Part 3, Section 3.6
Planned Purchases

Although inventory is available at the beginning of each month, the buyer must plan for new arrivals throughout the month, for these purposes:

- To replenish stock sold at the beginning of the month.
- To purchase new items that become available during the month.
- To buy off-price and special promotions or cuts (e.g., merchandise produced by vendors from leftover fabrics or specially purchased fabrics cut into the best-selling seasonal styles).
- To reorder "hot" or fast-selling items or basic merchandise.

The Timing of Purchases

Vendors ship the bulk of their merchandise at specific times during the six-month season. However, in order for fresh stock to be available to attract the interest of loyal customers, purchases need to be received throughout the selling season. The buyer must analyze what is happening in each month and what type of merchandise should be available in order to reach planned sales goals.

At the beginning of each season, retailers usually receive large amounts of seasonal merchandise. During the spring season, the spring merchandise is shipped in February and March, and the bulk of the summer merchandise is usually shipped immediately thereafter. Summer orders may begin shipping in March, and some retailers accept summer merchandise until the end of April.

Most vendors ship early fall (transitional) merchandise in June, and some ship back-to-school merchandise as early as July. In July, many retailers also bring in early fall merchandise. In May and June, the buyer is receiving closeouts, special purchases, and special cuts, such as swimsuits and warm-weather wear. However, delivery dates must be carefully planned and negotiated in order to ensure that the retailer maintains an adequate cash flow.

The Importance of the Timing of Purchases

If too much inventory is received in the same month, the retailer might need to borrow money to pay the invoices, thus incurring interest expenses — an overhead expense that will cut into the retailer's profit.

Calculating Planned Purchases

Planned purchases at retail are calculated to provide the dollar amount available to purchase new product for each month. The following formula is used to calculate planned purchases:

Planned Purchases $ = Planned Sales $ + Planned Markdown $ + EOM $ – BOM $

Use the formula above and the figures from the example six-month merchandise plan to calculate the planned purchases for February.

Calculate Planned Purchases for February

Planned Sales = $33.75

Planned Markdowns = $5.94

EOM = $164.25

BOM = $149.85

Planned Purchases $ = Planned Sales $
+ Planned Markdown $ + EOM $ – BOM $

= $33.75 + $5.94 + $164.25 – $164.25

= $54.09

Part 3, Section 3.7
Open-To-Buy

As discussed in the previous section, the buyer must plan to make purchases throughout the month. In addition, outstanding orders (goods previously ordered from vendors but not yet shpped or in transit) will be shipped and received into stock during the month. Open-to-buy (OTB) is the amount of additional merchandise (not already on hand, in transit, or on order) needed during a given period in order to meet the sales goal for that period without exceeding the planned EOM stock level. If there is an overage of stock at the end of the month, the buyer is said to be "overbought."

Open-To-Buy as a Control Device

Management monitors OTB to ensure that purchasing is carried out according to the six-month merchandise plan. The buyer must purchase enough stock to meet the planned sales figures, but not so much as to exceed the planned EOM stock level. To be effective as a purchasing control device, OTB should be calculated frequently.

We can think of the OTB dollars at the beginning of the month as the beginning balance in a checkbook. Each time the buyer places an order for merchandise, the dollar amount of the order is subtracted from the balance. Once the balance for the month reaches zero, the buyer is no longer open-to-buy, and must stop placing orders, or else become overbought.

An overbought buyer might be asked to stop making purchases until the planned inventory level is reached. Other measures might be taken to balance the stock level, such as cancelling overdue orders, returning stock or postponing deliveries (if contracts permit), or taking greater markdowns than planned.

Furthermore, not reaching the planned sales goal for the month will increase the BOM stock for the next month, thus reducing OTB for that month. On the other hand, exceeding the planned sales will decrease the next month's BOM stock, increasing OTB for the next month. OTB must be continually adjusted based on the actual sales, markdowns, and purchases realized during the month.

Calculating OTB

OTB dollars may be calculated at retail or at cost, and are customarily calculated at the beginning of the month and at intervals throughout the month. In the simplest terms, this is the formula for calculating OTB:

OTB = Merchandise Needed – Merchandise Available

In calculating the monthly OTB, the buyer must determine (1) the total amount of merchandise needed to reach the monthly sales goal and (2) how much of that merchandise is already available. The dollar value of **merchandise needed** includes planned sales, planned EOM stock, and planned markdowns. The dollar value of **available merchandise** includes stock on hand, on order, in transit, and in the receiving room.

Thus, the following formula is used to calculate OTB in retail dollars:

OTB $ = Planned Sales $ + Planned EOM $ + Planned Markdown $ – Current Inventory $ – Merchandise On Order $

Use the formula above, figures from the example six-month merchandise plan, and $25.00 for merchandise on order to calculate the OTB at retail for February.

Calculate OTB Retail $ for February

Planned Sales = $33.75
Planned EOM = $164.25
Planned Markdowns = $5.94
Current Inventory (Actual BOM) = $149.85
On Order = $25.00

OTB Retail $ = Planned Sales $ + Planned EOM $
+ Planned Markdown $
– Current inventory $ – On order $
= $33.75 + $164.25 + $5.94
– $149.85 – $25.00
= $29.09

Calculating OTB at Cost

The wholesale cost of the needed purchases can be calculated by calculating OTB at retail and reducing that figure to allow for the planned markup. Therefore, calculating OTB at cost requires knowing the markup percentage for the season.

Use the OTB at retail calculated above and a markup of 52.95% to calculate the OTB cost dollars for February. (Keep in mind that cost % = 100% – markup %.)

Calculate OTB Cost $ for February

OTB Retail $ = $29.09
Markup % = 52.95%

OTB Cost $ = OTB Retail $ × (100% – Markup %)
= $29.09 × (100% – 52.95%)
= $29.09 × 47.05%
= $13.69

A simpler way to calculate OTB at cost at the beginning of the month is to base it on the dollar value of planned purchases, converted to wholesale cost:

OTB Cost $ = Planned Purchases $ × Cost of Goods Sold %

This is the same formula as is used to calculate cost dollars when retail dollars and markup percentage are known, as described in Part 1, Section 2.1.

Use the formula above, the figures from the example six-month merchandise plan, and a markup of 52.95% to calculate the OTB cost dollars for February. Keep in mind that this calculation does not take into account merchandise on order.

Calculate OTB Cost $ for February Based on Planned Purchases

Planned purchases = $54.09
Markup % = 52.95%

OTB Cost $ = Planned Purchases $
× Cost of Goods Sold %
= $54.09 × (100% – 52.95%)
= $54.09 × 47.05%
= $25.45

Part 3, Section 3.8
The Impacts of Weather and Sales Promotions

After analyzing the actual figures posted during the same season of the previous year, the buyer must determine how those figures were affected by weather patterns and sales promotion activities. Furthermore, the buyer will want to determine how the macro and micro environmental scan information, characteristics of the target consumer, and happenings in the buying–selling process affected those figures. The buyer will then be ready to move forward with calculating the six-month merchandise plan for the upcoming season.

Weather Patterns

Most retailers keep a daily log of weather conditions and how those conditions may have affected daily sales volume, and possibly markdowns. Not all retail analysts believe that weather has a major impact on multi-year sales volume averages or retail sales patterns. However, many buyers believe, based on past experience, that weather conditions can hinder the achievement of planned sales goals for a specific sales period.

For example, if February is icy and snowy, the new spring arrivals may not sell well. If a wet and cool spring hinders sales of early spring merchandise, the peak selling period for that merchandise may be missed. When the weather changes, markdowns may be necessary, since the consumer is ready for lighter-weight active or playwear instead of the early spring merchandise. Examining the weather forecast for each month can help the buyer adjust the planned sales volume based on anticipated weather patterns.

Sources of Long-Term Weather Forecasts

For long-range weather forecasts, many retailers subscribe to *The Old Farmer's Almanac*, which provides forecasts for 18 U.S. regions. Some of the larger store groups subscribe to weather services or weather consultants.

Sales Promotion Activities

Sales promotion division managers use sales promotional calendars as records of all happenings during the retail year. These past records provide valuable information about the effectiveness of activities to promote merchandise classifications.

The calendars record the types and quantities of advertisements. The special-event log has information on each event's theme, date, place, time, and activities. The visual merchandising calendar alerts the buyer to the scheduling of floor changes, new display exhibitions, and building of major shop concepts and merchandising techniques used in specific departments and stores.

The buyer will want to determine which advertisements, special events and promotions, and visual merchandising activities and techniques were the most profitable, brought in the most customer traffic or new customers, or built the most sales volume. The buyer will not want to repeat a promotional activity that was not effective or had little impact.

Part 3, Section 4
Calculating the Six-Month Merchandise Plan

Part 3, Section 4.1
Seven-Step Procedure for Calculating the Plan

After completing the preplanning stage (described in Section 2) and the information gathering stage (described in Section 3), the buyer is prepared to begin the final stage in developing the six-month merchandise plan— the calculation stage. The information gathered in the previous stages of plan development provides a substantial foundation upon which to base decisions for a realistic and attainable plan.

As discussed in Section 1.2, the seven-step procedure for calculating the six-month merchandise plan includes the following calculations:

1. Total planned sales and total planned markdowns.
2. Monthly distribution of total planned sales.
3. Monthly distribution of total planned markdowns.
4. BOM stock for each month.
5. EOM stock for each month.
6. Monthly distribution of planned purchases at retail.
7. Monthly distribution of OTB at cost.

Example Six-Month Merchandise Plan

In the following sections, each component of the six-month merchandise plan is calculated for the six-month spring season (February through July, which includes spring and summer). This example plan is based on the actual six-month merchandise plan analyzed in Part 3, Section 3. The reader may wish to review the format of the plan presented in Section 3.1.

The Use of Computers for Calculations

In most retail organizations, six-month merchandise plans are calculated through the use of computer spreadsheets, such as Microsoft Excel.

Part 3, Section 4.2
Calculate Total Planned Sales

Two methods are most commonly used to calculate planned sales:

- For a new business, **sales per square foot.**
- For an existing business, **percent increase or decrease.**

Other Methods for Calculating Planned Sales

Other methods not addressed in this course include the **cost plus method** and the **market study method.** The reader may wish to research these less-used methods to learn about their uses and the calculations required.

The Sales Per Square Foot Method

For a new retail establishment, the retailer must estimate the annual retail sales volume. One of the best methods for calculating planned sales for a new business is the sales per square foot method, where the sales volume is estimated from the square feet of selling space in the physical retail store.

Existing stores or departments also may use this method, in which case they must first calculate the sales per square foot for the previous year as the basis for estimating planned sales for the next year.

The sales per square foot method is usually based on statistical averages provided by retail organizations, financial institutions, or business services. The buyer must adapt those national averages to the new store image, geographical area, target-consumer demands, and product classifications.

The following formulas are used to calculate sales per square foot and planned sales:

Sales $ Per Square Foot = Annual Sales $ ÷ Square Feet of Selling Space

Planned Sales $ = Square Feet of Selling Space × Annual Sales $

Use the formula above to calculate planned sales for a small specialty store or a department that has a retail selling space of 2,400 square feet and plans to sell at least $250.00 per square foot.

Calculate Planned Sales from Sales Per Square Foot

Selling Space = 2,400 sq. ft.
Sales Per Square Foot = $250.00

Planned Sales $ = Square Feet of Space
× Annual Sales $
= 2,400 × $250.00
= $600,000.00

Calculating Planned Sales for Six-Month Seasons

Sales per square foot is calculated for annual sales. Therefore, to calculate the six-month merchandise plan, the buyer must determine the relative sales volumes for the first and second six-month periods. As mentioned previously, most retailers realize from 40% to 45% of their annual sales in the spring and 55% to 60% of their annual sales in the fall.

Note that the formula is based on square feet of selling area only; it does not include the stockroom, receiving areas, restrooms, or storage areas. Sales per square foot vary with store type, product classifications, and the retailer's pricing strategies. For example, a piece of furniture takes much more space to house and display than does a diamond ring or a handbag. Therefore, jewelry or handbags have much higher sales per square foot than does furniture.

The Percent Increase or Decrease Method

For established businesses, retailers most commonly calculate planned sales for the season by estimating the percentage by which sales will increase or decrease from the same season of the previous year. As described in previous sections, the buyer conducts an analysis that considers the following factors:

- Total sales for the same season of the previous year.
- The current economic climate.
- Recent trends in retail sales.
- Changes in consumer buying patterns.
- Changes in store traffic.

The buyer must then decide on an attainable planned percent increase in sales, or else a realistic planned percent decrease in sales based on adverse circumstances.

Determining the Planned Percent Increase

Buyers usually plan for increased sales. The percent increase depends on the store type, product classification, price range of merchandise, and even geographical region. The buyer should consider the retailer's previous sales patterns, the national average percent increase for the store type and product type, the future economic outlook, and consumer buying patterns.

In-Store Factors Resulting in a Planned Percent Decrease

It is unusual for a buyer to plan for decreased sales. However, in the following situations, it is realistic to plan on decreased sales:

- Management is reducing the department's selling space.
- Vendors are being eliminated from the department.
- The department is being renovated or downsized in some manner.

Some retailers calculate sales per square foot for all departments and reward departments that are doing well with more selling space, which must then be taken from the departments with weaker sales. Consequently, the buyer must adjust to the available selling space and the economic situation.

The Planned Percent Increase or Decrease for Six-Month Periods

The buyer must predict whether sales will remain stagnant, increase over the same season of the previous year, or decrease from last year's sales, because of either external or internal factors. The increases or decreases can differ between the first and second six-month periods. The buyer must analyze each six-month period based on the factors that affect that particular season.

Calculating Planned Sales Based on Percent Increase or Decrease

The following formulas are used to calculate planned sales for the season:

Planned Sales $ = Base Year Sales $ + (Base Year Sales $ × % Increase)

OR

Planned Sales $ = Base Year Sales $ – (Base Year Sales $ × % Decrease)

Example Calculation of Planned Sales

After consulting with management, the buyer has decided that conditions are favorable for a 15% sales increase over the same season of the previous year. Calculate planned sales for the spring six-month merchandise plan, using figures from the example six-month merchandise plan shown in Section 3.1 (actual figures for the previous year) and a planned 15% increase in sales for the season.

Calculate Planned Sales Based on Percent Increase

Base Year Sales = $225.00
Percent Increase = 15%

Planned Sales $ = Base Year Sales $
+ (Base Year Sales $ × % Increase)
= $225.00 + ($225.00 × 15%)
= $225.00 + $33.75
= $258.75
= $259.00 (rounded to the nearest $1,000)

Part 3, Section 4.3
Calculate Total Planned Markdowns

The next step is to calculate the total planned markdowns for the six-month merchandise plan. Increasing or reducing the planned markdowns is difficult, yet critical for a realistic plan. These decisions must be based on actual happenings in the department or store.

Deciding on a Markdown Percentage

The example six-month merchandise plan can be used to illustrate an approach to deciding on a markdown percentage. In the example plan, markdowns totalled $49,500 ($49.50), or 22% of the total sales, up from 20% for the same season of the previous year. Based on analysis, it appears to the buyer that high markdowns have become a problem for the department. Therefore, after investigating the department's problem areas and reviewing the environmental scan, the buyer has decided to decrease the planned markdowns to 19%.

Calculating Total Planned Markdowns

The following formula is used to calculate planned markdowns for the season:

Planned Markdown $ = Planned Sales $ × Planned Markdown %

In Section 4.2, total planned sales for the six-month plan were calculated to be $259.00. Using this figure and a planned markdown percentage of 19%, calculate total planned markdowns.

Calculate Planned Markdowns Based on Planned Sales

Planned Sales = $259.00
Planned Markdown % = 19%

Planned Markdown $ = Planned Sales $
× Planned Markdown %
= $259.00 × 19%
= $49.21

Note that the planned markdown dollar amount ($49.21) is almost the same as the previous year's figure of $49.50. This is because the planned markdowns are calculated as the percentage of an increased planned total sales figure ($259.00 vs. $225.00 for the previous year). Nonetheless, the planned markdowns in dollars have been reduced by 3 percentage points (from 22% to 19%).

Part 3, Section 4.4
Calculate the Monthly Distributions of Planned Sales and Markdowns

The total planned sales and total planned markdowns must be divided into monthly increments and allocated across the months of the six-month merchandise plan. As previously discussed, sales volumes and the markdowns required to meet sales goals vary from month to month, from season to season, and from year to year.

The Monthly Planned Figures Must Total 100%

The dollar amounts of the monthly planned sales and monthly planned markdowns must sum to the total planned sales and total planned markdowns, and the monthly percentages must total 100%. If rounding results in totals exceeding 100%, figures for individual months will need to be adjusted accordingly.

Planning the Monthly Sales Percentages

For established retailers, monthly planned sales most commonly are calculated as percentages of the total sales volume for the same season of the previous year, and then adjusted to fit the new planned total sales.

To determine the percentage of total sales to allocate to each month during the six-month season, the buyer should review the previous year's sales volume by month and look for the peaks and valleys of sales during the six-month period. In estimating monthly percentages, the buyer should use the following information:

- The environmental scan.
- Analysis of the sales data from the same season of the previous year.
- The timing of major holidays during the season.
- Long-range weather forecasts.

Calculating the Monthly Planned Sales

Once the planned monthly sales percentages have been determined, the following formula is used to calculate the monthly planned sales:

Monthly Planned Sales $ = Total Planned Sales $ × Monthly Sales %

Use the above formula to calculate the planned sales for February, using the the total planned sales figure calculated in Section 4.2 and a planned sales percentage of 13.16% for February.

Calculate the Planned Sales for February

Total Planned Sales = $259.00
February Sales % = 13.16%

Monthly Planned Sales $ = Total Planned Sales $
× Monthly Sales %
= $259.00 × 13.61%
= $34.08

Planning the Monthly Markdown Percentages

To determine the percentage of total markdowns to allocate to each month during the six-month season, the buyer again reviews the previous year's pattern of monthly markdowns, and takes into account such factors as the timing of holidays and weather predictions.

The total markdown percentages and dollars must be distributed across the six-month period and allocated to each month based on the merchandising activities that will be needed to reach the monthly sales goals.

Calculating the Monthly Planned Markdowns

Once the monthly planned markdown percentages have been determined, the following formula is used to calculate the monthly planned markdowns:

Monthly Planned Markdown $ = Total Planned Sales $ × Monthly Markdown %

Use the above formula to calculate the planned markdowns for February, using the the total planned sales figure calculated in Section 4.2 and a planned markdown percentage of 2.20% for February.

Calculate the Planned Markdowns for February

Total Planned Sales = $259.00
February Markdown % = 2.20%

Monthly Planned Markdown $
= Total Planned Sales $ × Monthly Markdown %
= $259.00 × 2.20%
= $5.70

Example of Analysis and Calculation of Planned Sales and Markdowns

As discussed in Sections 3.3 and 3.4, analysis of the previous year's spring six-month merchandise plan revealed some unusual figures for actual monthly sales and markdowns, which could indicate problems in planning or execution:

- The sales volume was unusually low in May.
- Markdowns were unusually high in the second quarter, possibly because markdowns on spring merchandise were delayed.
- July markdowns were especially high.
- Total markdowns for the six-month period were up 2% from the previous year.

The following chart shows the actual sales and markdown figures from the example six-month merchandise plan and the new six-month plan developed to address the problems mentioned above, while increasing the total sales volume. (Note that in the new six-month spring season, Easter again falls in March.)

As discussed in Section 4.2, the buyer plans to reduce the total markdown percentage to 19%, to increase May sales, and to shift the planned monthly markdowns to peak earlier in the second quarter.

Last Year's and Planned Sales and Markdowns for the Spring Season

	Feb	Mar	Apr	May	Jun	Jul	Season	Aug
Sales $ LY	$33.75	$45.00	$42.75	$29.25	$31.50	$42.74	**$225.00**	$42.00
$ Plan	$34.08	$44.63	$40.84	$44.16	$49.08	$46.21	**$259.00**	$44.39
% LY	15%	20%	19%	13%	14%	19%	100%	
% Plan	13.16%	17.23%	15.77%	17.05%	18.95%	17.84%	100%	
Markdown $ LY	$5.94	$6.93	$5.94	$8.91	$9.90	$11.88	**$49.50**	
$ Plan	$5.70	$5.18	$5.44	$10.10	$12.95	$9.84	**$49.21**	
% LY	2.64%	3.08%	2.64%	3.96%	4.40%	5.28%	22.00%	
% Plan	2.20%	2.00%	2.10%	3.90%	5.00%	3.80%	19.00%	

Part 3, Section 4.5
Calculate the BOM and EOM Stock

As discussed in Part 2, Section 3.5, the inventory levels are related to the monthly sales volume for the month and inventory turnover for the six-month period. The apparel industry uses several methods to calculate planned inventory levels.

Calculating the BOM Stock

The following methods are most commonly used to calculate BOM stock levels:

- The **stock/sales ratio method,** which relates the amount of inventory needed for each month to the planned sales goal for that month.
- The **basic stock method,** which maintains a base level of inventory (the "basic stock") throughout the period, but also takes into account the monthly sales volume.
- The **percentage variation method,** which calculates the BOM stock as a percentage of the average inventory for the six-month period.

The following additional methods, used for basic or staple merchandise, are not addressed in this section; the reader may wish to research these methods:

- The **weeks-of-supply method,** which is used for stock that sells quickly and needs to be replenished frequently.
- The **periodic replenishment of staple merchandise method,** which is used for staple merchandise that is continually stocked throughout the year.

Stock/Sales Ratio Method

This simple method for calculating BOM stock requires the buyer to **already have determined the planned monthly stock/sales ratios** for the new six-month merchandise plan. As discussed in Part 3, Section 3.5, the stock/sales ratio relates the value of the stock on hand for the month to the sales for that month; it is the number of dollars it takes to sell one dollar's worth of merchandise. The buyer can use previous budgets or national S/S ratio averages to plan the monthly S/S ratios.

When planned monthly sales and S/S ratios are known, the BOM stock can be calculated by the following formula:

BOM Stock $ = Planned Monthly Sales $ × Monthly S/S Ratio

Use the above formula, the planned February sales from Section 4.4, and a planned monthly S/S ratio of 5.43 to calculate the BOM stock for February by the stock/sales ratio method.

Calculate the BOM Stock $ for February (S/S Ratio Method)

Planned February S/S Ratio = 5.43
Planned February Sales = $34.08

BOM $ = Planned Feb. Sales $ × Feb. S/S Ratio
= $34.08 × 5.43
= $185.05

The Basic Stock Method

Retailers use the basic stock method to ensure that merchandise is always in stock, without stockouts, odd lots, or broken sizes. This method is used for basic and fashion basic items that should always be available for consumer selection. For example, the basic stock method might be used to calculate the BOM stock for the store's most popular sizes in men's white underwear or workwear denim jeans.

Basic stock can be calculated for quarters, six-month periods, or annually. Using the basic stock method to calculate the BOM stock for the six-month merchandise plan requires **knowing the planned inventory turnover for the season.**

The following steps are used to calculate the BOM stock by the basic stock method:

1. **Average Inventory $ for the Season = Total Sales $ ÷ Turnover**
2. **Average Monthly Sales $ = Total Sales $ ÷ 6 months**
3. **Basic Stock $ = Average Inventory $ – Average Monthly Sales $**
4. **BOM Stock $ = Basic Stock $ + Planned Monthly Sales $**

Use these formulas, the planned total sales and February sales figures from Section 4.4, and a planned seasonal turnover of 1.25 to calculate the BOM stock needed for the month of February.

1. Calculate the Average Inventory $ for the Season

Total Planned Sales = $259.00
Turnover = 1.25

Average Inventory $
= Total Planned Sales $ ÷ Turnover
= $259.00 ÷ 1.25
= $207.20

2. Calculate the Average Monthly Sales $ for the Season

Total Planned Sales = $259.00
Months = 6

Average Monthly Sales $ = Total Planned Sales $ ÷ 6
= $259.00 ÷ 6
= $43.17

3. Calculate the Basic Stock $ for the Season

Average Inventory = $207.20
Average Monthly Sales = $43.17

Basic Stock $ = Average Inventory $
– Average Monthly Sales $
= $207.20 – $43.17
= $164.03

4. Calculate the BOM Stock $ for February (Basic Stock Method)

Basic Stock = $164.03
Planned February Sales = $34.08

BOM $ = Basic Stock $ + Planned Feb. Sales $
= $164.03 + $34.08
= $198.11

Percentage Variation Method

The percentage variation method is based on the premise that the percentage variation in the monthly inventory should be related to the percentage variation in monthly sales. This method results in a greater difference between the highest and lowest BOM inventories than do the other methods.

Using the percentage variation method to calculate the BOM stock for the six-month merchandise plan **requires knowing the planned average inventory for the season.**

The following formula is used to calculate BOM stock by the percentage variation method:

BOM Stock $ = Average Inventory $
× 0.5 (1 + Monthly Sales $ ÷ Average Monthly Sales $)

Use the formula above to calculate the BOM stock needed for the month of February. For the purpose of this example, assume a planned average inventory for the season of $204.79 and the same planned Febuary sales and planned average sales as in the basic stock method example (above).

Calculate the BOM Stock $ for February (% Variation Method)

Average Inventory = $204.79
Planned February Sales = $34.08
Average Monthly Sales = $43.17

BOM Stock $ = Avg. Inventory $ × 0.5 (1 + February Sales $ ÷ Avg. Monthly Sales $)
= $204.79 × 0.5 (1 + $34.08 ÷ $43.17)
= $204.79 × 0.5 (1 + 0.79) = $204.79 × 0.5 (1.79) = $204.79 × 0.9*
= $184.31

*Rounded from 0.895

Calculating EOM Stock

The EOM stock for each month is the same as the BOM stock for the following month. In order to calculate the EOM stock for July, the buyer must know the planned sales and the S/S ratio for August (as estimated for the fall merchandise plan).

The Example Six-Month Plan Uses the Stock/Sales Ratio Method

In this course, the example of a new spring six-month merchandise plan uses the stock/sales ratio method to calculate the planned BOM stocks.

Updating the Example Six-Month Merchandise Plan

The following chart uses the chart developed for planned sales and markdowns in Section 4.4 and adds the estimated S/S ratios for each month, the BOM stock figures calculated by the S/S ratio method (as shown above for the month of February), and the EOM stock figures.

Six-Month Merchandise Plan for the Next Spring Season

	Feb	Mar	Apr	May	Jun	Jul	Season	Aug
Sales $ LY	$33.75	$45.00	$42.75	$29.25	$31.50	$42.74	**$225.00**	$42.00
$ Plan	$34.08	$44.63	$40.84	$44.16	$49.08	$46.21	**$259.00**	$44.39
% LY	15%	20%	19%	13%	14%	19%	100%	
% Plan	13.16%	17.23%	15.77%	17.05%	18.95%	17.84%	100%	
Markdown $ LY	$5.94	$6.93	$5.94	$8.91	$9.90	$11.88	**$49.50**	
$ Plan	$5.70	$5.18	$5.44	$10.10	$12.95	$9.84	**$49.21**	
% LY	2.64%	3.08%	2.64%	3.96%	4.40%	5.28%	22.00%	
% Plan	2.20%	2.00%	2.10%	3.90%	5.00%	3.80%	19.00%	
BOM Stock $ LY	$149.85	$164.25	$168.44	$152.98	$137.66	$134.66	**$148.59**	$132.30
$ Plan	$185.05	$186.11	$211.96	$218.59	$197.59	$223.19	**$204.79**	$210.85
EOM Stock $ LY	$164.25	$168.44	$152.98	$137.66	$134.66	$132.30	$210.85	
$ Plan	$186.11	$211.96	$218.59	$197.59	$223.19	$132.30	$210.85	
S/S Ratio LY	4.44	3.65	3.94	5.23	4.37	3.15	1.51 Turn	3.15
Plan	5.43	4.17	5.19	4.95	4.03	4.83	1.25 Turn	4.75

Part 3, Section 4.6
Calculate Planned Purchases and OTB

Planned purchases are crucial to meeting the planned monthly sales goals. The stock must be in the store before the peak of the selling season, and should be received in the store throughout the selling season. The buyer must carefully plan the quantities of units and timing of deliveries to meet the planned sales goals.

Calculating Planned Purchases at Retail

Planned purchases are based on the inventory on hand, planned sales, planned markdowns, and the EOM stock that will be needed to meet the following month's sales goals.

As discussed in Section 3.6, the following formula is used to calculate planned purchases at retail:

Planned Purchases $ = Planned Sales $ + Planned Markdown $ + EOM $ – BOM $

Using the formula above, the planned sales and reductions figures caculated in Section 4.4, and the planned BOM and EOM inventories calculated in Section 4.5, calculate the planned purchases at retail for the month of February.

Calculate the Planned Purchases at Retail for February

Planned February Sales = $34.08
Planned February Markdowns = $5.70
Planned February EOM $ = $186.11
Planned February BOM $ = $185.05

Planned Purchases $ = Planned Sales $ + Planned Markdown $ + EOM $ – BOM $
= $34.08 + $5.70 + $186.11 – $185.05
= $40.84

Calculating Open-To-Buy (Planned Purchases at Cost)

The budget that the buyer takes to market must be calculated at the wholesale cost of the inventory to be purchased for each month. To make these calculations, **the initial markup percentage for the season must be known.**

As discussed in Section 3.7, the following formula is used to calculate open-to-buy from planned purchases at retail and the markup percentage:

OTB Cost $ = Planned Purchases $ × Cost of Goods Sold %

Use the formula above, the planned purchases at retail calculated above, and a markup of 52.95% to calculate the open-to-buy at the beginning of the month of February.

Calculate OTB Cost $ for February

Planned February Purchases = $40.84
Markup % = 52.95%

OTB Cost $ = Planned Purchases $ × (100% – Markup %)
= $40.84 × (100% – 52.95%)
= $40.84 × 47.05%
= $19.22

Recording Open-To-Buy

Many retailers do not record OTB cost figures on the six-month merchandise plan, but track them on a separate form that is continuously updated. However, for this course, the planned initial monthly OTB at cost (in addition to planned purchases at retail) has been added to the chart showing the new six-month merchandise plan.

Example Six-Month Merchandise Plan

	Feb	Mar	Apr	May	Jun	Jul	Season	Aug
Sales $ LY	$33.75	$45.00	$42.75	$29.25	$31.50	$42.74	**$225.00**	$42.00
$ Plan	$34.08	$44.63	$40.84	$44.16	$49.08	$46.21	**$259.00**	$44.39
% LY	15%	20%	19%	13%	14%	19%	100%	
% Plan	13.16%	17.23%	15.77%	17.05%	18.95%	17.84%	100%	
Markdown $ LY	$5.94	$6.93	$5.94	$8.91	$9.90	$11.88	**$49.50**	
$ Plan	$5.70	$5.18	$5.44	$10.10	$12.95	$9.84	**$49.21**	
% LY	2.64%	3.08%	2.64%	3.96%	4.40%	5.28%	22.00%	
% Plan	2.20%	2.00%	2.10%	3.90%	5.00%	3.80%	19.00%	
BOM Stock $ LY	$149.85	$164.25	$168.44	$152.98	$137.66	$134.66	**$148.59**	$132.30
$ Plan	$185.05	$186.11	$211.96	$218.59	$197.59	$223.19	**$204.79**	$210.85
EOM Stock $ LY	$164.25	$168.44	$152.98	$137.66	$134.66	$132.30	$210.85	
$ Plan	$186.11	$211.96	$218.59	$197.59	$223.19	$132.30	$210.85	
S/S Ratio LY	4.44	3.65	3.94	5.23	4.37	3.15	1.51 Turn	3.15
Plan	5.43	4.17	5.19	4.95	4.03	4.83	1.25 Turn	4.75
Purchases $ LY	$54.09	$56.12	$33.23	$22.84	$38.40	$52.26	**$256.94**	
$ Plan	$40.84	$75.66	$52.91	$33.46	$87.43	$43.71	$334.01	
OTB Cost $ Plan	$19.22	$35.60	$24.89	$15.74	$41.14	$20.57		

Part 3, Section 4.7
Using the Six-Month Plan To Track Performance

The six-month merchandise plan is a guide used by the buyer to help achieve profitability. The plan relates the sales volume to the inventory levels, provides a guideline for markdowns, and estimates the purchases of inventory needed for the plan to work. However, when plans are put into action, the actual happenings in the department never precisely meet the planned goals.

The Six-Month Plan as a Working Plan

The six-month merchandise plan becomes the **working plan** for the store or department. Throughout the spring season, the buyer records the actual monthly figures, compares them with the planned figures, and makes decisions, based on actual happenings, about whether adjustments in the plan are needed. A model chart for recording both the planned and actual sales, markdowns, and purchases is provided at the end of this section.

The buyer can use the actual figures for each month to calculate the achieved EOM stock by the following formula:

Achieved EOM Stock $ = BOM Stock $ – Sales $ – Reductions $ + Purchases $

These calculations can be used to track problem areas and make adjustments in order to meet the sales goals for the rest of the season. For example, if the sales goal is not met for one month, then the BOM stock for the next month will exceed the planned level. If there is too much inventory, the buyer must decide whether to take additional markdowns, cancel orders, or plan for special events or promotions in order to move the excess inventory.

The six-month merchandise plan also alerts management to the amount of capital needed for the season, and to whether merchandising policies are effective or need to be reevaluated.

Monitoring the Stock/Sales Ratio and Stock Turnover

The retailer must constantly monitor both the S/S ratio and stock turnover in order to maintain the planned inventory levels. Stock/sales ratios are adjusted throughout the six-month selling period, and turnover is evaluated for the entire season in order to develop more efficient and profitable merchandising activities and policies.

As discussed in Part 2, Section 3.5, both the S/S ratio and stock turnover describe a relationship between sales and inventory. The S/S ratio relates inventory to sales, and turnover indicates how quickly the average inventory is sold and then replenished during a given period. The S/S ratio is usually calculated monthly, while turnover is calculated for a season or annually, by the following formulas:

Stock/Sales Ratio = Monthly Stock $ ÷ Monthly Sales $

Turnover = Net Sales $ ÷ Average Inventory $

Rapid turnover usually indicates a higher sales volume and greater profit on the investment in inventory. However, failure to replenish the inventory in a timely manner results in stockouts,

resulting in lost sales and the need for higher markdowns, decreasing profit. There are two ways to increase turnover:

- Reduce the average inventory while maintaining the same sales volume.
- Increase sales without increasing the inventory.

Retailers must strive to find an ideal balance between the amount of inventory available for purchase by consumers and the volume of sales realized from that inventory. To achieve this balance, the buyer must develop sound vendor partnerships in order to receive complete shipments delivered on time, make timely reorders, and buy in smaller quantities without paying more for the goods or forfeiting vendor allowances and discounts.

Evaluating Annual Productivity

The productivity of the retailer's merchandising activities can be evaluated by adding the turnover figures for the spring and fall six-month merchandise plans. If a retailer carrying fashion goods purchases merchandise for five selling seasons (spring, summer, early fall/transition, fall, and holiday), the ideal turnover for the year is 5.0. In other words, the retailer would like to sell and replace the average inventory 5.0 times per year. However, few retailers attain the ideal yearly turnover. Turnover is commonly 1.5 to 2.0 for the spring six-month period and 2.0 to 3.0 for the fall six-month period.

The Importance of the Six-Month Merchandise Plan as a Guide

The six-month merchandise plan relates sales to inventory levels, to ensure profitability. As a planning tool, it helps the retail buyer to

- maintain the inventory levels needed to achieve the desired sales volume,
- monitor markdowns, and
- adjust monthly merchandising activities in order to attain the profit and margin goals for a profitable retail operation.

The plan not only drives sales, purchases, and markdowns, but also affects the store's promotional and visual merchandising budgets and its operational activities.

Model Chart for Monitoring Performance

Season: Spring **Year:** Spring Six Month Merchandise Plan

Month	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	SEASON	AUGUST
BOM $ Plan								
BOM $ Actual								
Sales % Plan								
Sales % Actual								
Sales $ Plan								
Sales $ Actual								
Purchases % Plan								
Purchases % Actual								
Purchases $ Plan								
Purchases $ Actual								
Reductions % Plan								
Reductions % Actual								
Reductions $ Plan								
Reductions $ Actual								
EOM $ Plan								
EOM $ Actual								
S/S Ratio Plan								
S/S Ratio Actual								

Part 3
Review Problems

Using the appropriate formulas, calculate the answers to the following problems, and select the correct answers from the available choices. Be sure to round dollar amounts according to financial notation. The answer key may be found on page 166.

Calculating Planned Sales

1. For last year's spring season, a specialty-store buyer realized $225,000 in total sales. The store owner has advised her that she should plan for a 3% increase in total sales for the new spring season. For the new six-month plan, calculate (1) the dollar amount of the planned increase and (2) the planned total sales.

	Increase	*Total Sales*
a.	$11.25	$231.75
b.	$33.75	$259.00
c.	$22.50	$247.50
d.	$6.75	$231.75

2. For last year's fall season, the Junior Sportswear Department had sales of $450,000. This year's fall season sales were $488,000. Calculate the increase in dollars and as a percentage.

	Increase	*%*
a.	$38.00	7.79 %
b.	$38.00	8.44 %
c.	$38.00	8.79 %
d.	None of the above	

3. Management notified the Premium Denim buyer that sales of premium denim were forecast to decrease for the new fall season. The buyer has decided to plan for a 5% decrease in sales. Last year's fall season sales were $235,000. Calculate (1) the planned decrease in dollars and (2) the planned sales.

	Decrease	*Total Sales*
a.	$11.75	$223.25
b.	$11.25	$231.75
c.	$6.75	$231.75
d.	None of the above	

4. Sales for the Misses Sportswear Department decreased from $425,000 last year to $395,000 this year. Calculate the dollar amount and percentage of the decrease.

	Decrease	*%*
a.	$30.00	7.60%
b.	$25.00	5.88%
c.	$30.00	7.06%
d.	None of the above	

5. This year, a small specialty store had annual sales of $500,000 in 1,800 square feet of selling space. The buyer plans to increase sales by 7% next year.

   (1) What were the sales per square feet this year?

   (2) If the store realizes sales of $300 per square foot next year, will the annual sales volume reach the planned 7% increase in sales?

	Sales/ft²	*Increase ≥ 7%?*
a.	$250.00	no
b.	$280.00	yes
c.	$300.00	no
d.	$277.78	yes

Calculating Monthly Distribution of Sales

6. The Misses Sportswear buyer plans to increase sales for the new spring season by 8.5%. Last year's spring sales volume was $385,450. If the buyer plans to sell $76,840 worth of merchandise at retail in the month of April, what percentage of the total sales volume will be sold in April?

   a. 18.95%
   b. 17.84%
   c. 15.77%
   d. 18.37%

Calculating Markdowns and Monthly Distribution of Markdowns

7. The Divisional Manager has requested that the new buyer for the Contemporary Dress Department attempt to reduce markdowns. For last year's six-month spring season, planned markdowns were $45,550, and planned sales totalled $285,850.

   (1) Calculate the planned markdown percentage for last year.

   (2) If the buyer reduces the markdown percentage by 2% and increases sales by 5%, what will be the planned markdown percentage and sales for the new season?

	LY Markdown %	*Planned Markdown %*	*Planned Sales*
a.	13.93%	15.93%	$45.55
b.	15.93%	13.93%	$41.81
c.	13.93%	15.93%	$41.81
d.	None of the above		

8. When working on the six-month plan for the new spring season, the Contemporary Dress buyer noticed that highest monthly markdown percentage was for June, at 5.00% of total sales of $259,000. She plans to have a special fashion event and introduce trendy early fall merchandise in the department during June and July. Therefore, she plans to mark the dresses down earlier in the second quarter and reduce the markdown percentage for June by 1.5%. Also, because of the special fashion event, she plans to increase sales for the spring season by 3%. For the new plan, calculate (1) planned sales, (2) the June markdown percentage, and (3) planned June markdowns in dollars.

	Total Sales	*June Markdown %*	*June Markdowns*
a.	$266.77	3.50%	$9.34
b.	$259.50	2.50%	$9.84
c.	$265.00	3.50%	$10.10
d.	$275.77	2.50%	$12.95

Calculating BOM Stock

9. (1) If sales for the month of May are $44,160 and the BOM stock is $218,590, calculate the stock/sales ratio for May.

   (2) If sales for the month of July are $46,210 and the stock/sales ratio is 4.83, calculate the BOM stock for the month of July.

	May S/S Ratio	*July BOM Stock*
a.	5.43	$185.05
b.	5.19	$211.96
c.	4.95	$223.19
d.	4.83	$223.19

10. The new Childrens's Department buyer has decided to use the percentage variation method to calculate the planned BOM stock. Use the following figures for the six-month spring season to calulate the BOM stock for the month of June. *(Hint: Review how to calculate average inventory as described in Part 2, Section 3.5.)*

    BOM Stock (7 mo.): $149.85, $164.25, $168.44, $152.98, $137.66, $134.66, $132.30

    Monthly Sales (6 mo.): $33.75, $45.00, $42.75, $29.25, $31.50, $42.74

    a. $136.70
    b. $137.66
    c. $134.66
    d. None of the above

11. Using the same figures as in Problem 10, use the basic stock method to calculate the planned July BOM stock.

    a. $136.70
    b. $137.66
    c. $158.83
    d. none of the above

Calculating Planned Purchases

12. For the month of June, the buyer for the Young Menswear Department has planned sales of $40,840; planned markdowns of $5,440; planned EOM stock of $218,590, and planned BOM stock of $211,960. Calculate the planned purchases for the month of June.

    a. $52.75
    b. $52.91
    c. $23.74
    d. None of the above

Calculating OTB

13. For the Young Menswear Department in Problem 12, calculate OTB for the beginning of June based on a planned 55% markup.

    a. $23.74
    b. $52.99
    c. $23.81
    d. None of the above

Turnover

14. Use the following figures to calculate turnover for the spring six-month period.

Month	*Sales*	*BOM Stock*
February	$30,000	$120,000
March	$43,000	$170,000
April	$40,000	$160,000
May	$35,000	$105,000
June	$32,000	$96,000
July	$31,000	$93,000
August	$32,000	$125,000

    a. 2.50
    b. 1.70
    c. 1.88
    d. 3.00

Stock/Sales Ratio

15. Use the figures in Problem 14 to calculate the stock-to-sales ratio for the month of August.

    a. 3.91
    b. 3.95
    c. 4.00
    d. 3.00

Glossary

The Terminology of Retail Math

Achieved markup—see **Maintained markup**

Alterations—the expense of providing post-sale alteration of garments

Average inventory—the average dollar amount of inventory in the store or department over a given period of time

Average markup—markup averaged over product classifications, groups of items, departments, or stores, for an order, a group of purchases, or an entire inventory

Basic merchandise—products that change little from one season to the next and are in continuous demand; also known as "staple merchandise"

Basic stock method—a method for calculating the planned beginning-of-the-month inventory that maintains a base level of inventory (the "basic stock") throughout the period, but also takes into account the monthly sales volume

Beginning-of-the-month (BOM) stock—the dollar value of the stock (inventory) on hand at the beginning of a month

"Better" merchandise—knock-offs of designer styles or adaptations of top-selling contemporary styles, in better- to moderate-quality fabrications, offered at prices affordable by the majority of consumers

Billed cost of goods—see **Invoiced cost of goods**

Brand equity—a designer or national brand's value as determined by consumer perceptions

Budget merchandise—products of various quality levels sold by discounters and mass merchants, offered at lower prices; also knowns as "mass-market merchandise"

Buying–selling curve—a graph relating a product's fashion level to the product life cycle and the target consumer at any given stage of the life cycle; also known as the "fashion life cycle"

Buying–selling cycle—the processes and activities for planning, procuring, presenting, marketing, and promoting merchandise to the target consumer during each six-month period of the retail year

Cash discount—a predetermined percentage discount for paying a vendor's invoice on or before a designated date; deducted from the invoiced cost of goods when the retailer pays the invoice; stipulated in the terms of sale

Closeouts—merchandise left over at the end of a vendor's selling season and offered at a reduced wholesale price

Contemporary merchandise—trendy products of good quality, offered in updated fabrications and styles at premium prices

Contribution margin—the margin remaining after direct expenses are subtracted from the gross margin; also known as the "controllable margin"

Controllable expenses—see **Direct expenses**

Controllable margin—see **Contribution margin**

Cost of goods sold—the invoiced cost of goods (including trade and quantity discounts), plus transportation costs, plus the cost of alterations, less cash discounts; also known as the "total cost of goods sold"

Cumulative markup—the average markup over a given period of time during a retail year (e.g., month, quarter, season, or six months); the difference between the total cost of goods and total retail price of merchandise handled during a given period of time

Customer returns and allowances—reduction in the retail price of merchandise (usually after the completion of sale) due to soiling, damage, or incorrect style, color, or size

Customer services—specialized or personalized services, such as alterations, monogramming, or repair

Dating—the date by which the retailer must pay the vendor for the goods in order to take a cash discount; the date after which the payment is considered overdue

Demographics—socioeconomic characteristics of populations that identify and define consumer markets

Designer merchandise—highly fashionable or luxury products carrying the labels of well-known designers, characterized by high-quality materials and fabrication and offered at the highest prices

Direct expenses—operating expenses that can be directly attributed to a particular department; also known as "controllable expenses"

Employee discounts—reduction in price on employee purchases; an employee benefit and incentive for employees to become familiar with stock

End-of-the-month (EOM) stock—the dollar value of the stock (inventory) on hand on the last selling day of a retail month

Expanded profit and loss statement—a fully detailed profit and loss statement; contrast with **Skeletal profit and loss statement**

Fashion life cycle—see **Buying–selling curve**

Fashion merchandise—products in the prevailing style and accepted by a substantial group of consumers, at any given time

Fixed expenses—see **Indirect expenses**

Free on board (FOB)—a shipping term which, followed by the destination, indicates where ownership of the goods is transferred from the vendor to the retailer

FOB destination; charges reversed—terms indicating that the vendor pays for shipping and that the retailer takes ownership of the goods at the retailer's location and reimburses the vendor for the shipping charges after the goods are delivered

Gross margin—the dollar or percentage difference between net sales and the cost of goods sold

Gross margin return on investment (GMROI)—a ratio measuring how many gross margin dollars are produced per dollar of the cost of the average inventory; also known as "gross margin return on inventory investment"

Gross margin return on inventory investment (GMROII)—see **Gross margin return on investment**

Gross markup—the markup calculated for a group of items of merchandise; the difference between total retail price and total wholesale cost of a group of items

Gross sales—the total retail prices charged to the customer (including both cash and credit sales) by the retailer for all goods and services before any retail reductions

Gross wholesale cost of goods—see **Wholesale cost of goods**

Income statement—see **Profit and loss statement**

Indirect expenses—expenses of operating the business as a whole, which would still be incurred if the individual department were eliminated

Individual markup—the markup calculated for one item of merchandise or for one stockkeeping unit; the difference between the retail price and wholesale cost of the item

Initial markup—the difference between the wholesale cost and the original retail price

Inventory—the retail value of the merchandise on hand (on the floor and in the backroom) and on order; also known as "stock"

Inventory turnover—see **Turnover**

Invoice—vendor's bill or itemized statement of items shipped, showing unit and extended costs of goods (reflecting trade and quantity discounts); the invoice often also includes charges for transportation and shipping insurance

Invoiced cost of goods—the amount the retailer pays the vendor for merchandise, after trade and quantity discounts; the vendor's list price less trade and quantity discounts negotiated by the buyer; also known as the "billed cost of goods"

Keystone markup—doubling the wholesale cost of an item to determine its retail price

List price—the vendor's price for the goods before trade or quantity discounts are applied; also known as the vendor's (or manufacturer's) "suggested retail price"

Maintained markup—the difference between the wholesale cost of the goods and the retail price at which they are sold (based on actual sales); also known as the "achieved markup"

Markdown—a reduction in the retail price of merchandise (from the original retail price)

Markup—the amount added to the wholesale cost of goods to determine the retail price of an item; see **Average, Gross, Individual, Initial, Keystone,** and **Maintained markup**

Markup goal—the planned markup percentage established for the department by management before the start of the retail year

Mass-market merchandise—see **Budget merchandise**

Merchandise types—categories reflecting the style characteristics of product classifications; see **Basic, Fashion, Seasonal,** and **Staple merchandise**

Merchandise zones—merchandise categories based on consumer lifestyles, fashion trend directions, fashion taste levels, price range, and types and quality of fiber, fabric, and construction; usually correpond to locations within the store or department; see **Better, Budget, Contemporary, Designer, and Moderate merchandise**

Merchandising—all of the business activities involved in planning, creating, distributing, and marketing merchandise assortments and classifications to the target consumer while reflecting the company image

"Moderate" merchandise—traditional styles with little detailing, in fair- to good-quality fabrications, offered at lower prices than "better" merchandise

Net operating profit—see **Operating profit**

Net profit—profit after taxes

Net profit before taxes— see **Operating profit**

Net sales—on the **Skeletal P&L statement,** net sales equal gross sales minus customer returns and allowances; also known as "sales volume" or "operating income"; on the **Expanded P&L statement,** net sales equal gross sales minus all retail reductions

Open-to-buy—for a specific period, the amount of merchandise that may be purchased and received without exceeding the planned ending inventory; equivalent to planned purchases at cost, less the merchandise on hand; the dollar amount the buyer has left to spend for the period

Operating expenses—the expenses (direct or indirect) incurred in order to operate a business excluding the cost of goods sold; also known as "overhead"

Operating income—see **Net sales**

Operating profit—the gross margin less operating expenses; also known as "net operating profit" or "net profit before taxes"

Operating statement—see **Profit and loss statement**

Overbought—a situation in which actual purchases have exceeded the planned purchases for a given period of time

Overhead — see **Operating expenses**

Patronage discount—see **Quantity discount**

Percent increase or decrease method—planned sales volume is based on the estimated percentage by which sales will increase or decrease from the same season of the previous year

Planned purchases—in the six-month merchandise plan, the retail value of the planned purchases of inventory for a given period (month or season)

Planned reductions—in the six-month merchandise plan, the dollar value of the planned markdowns for a given period (month or season); also expressed as a percent of net sales

Planned sales—in the six-month merchandise plan, the planned sales volume for a given period (month or season), estimated by the **Percent increase or decrease method** or the S**ales per square foot method**

Prepack—items bundled by the vendor to be sold at a discount

Pricing—see **Retail pricing**

Pricing policies—procedures and guidelines for determining the retail price of inventory

Pricing strategies—pricing policies, action plans and techniques, and guidelines for price adjustments when implementing pricing policies

Pricing types—pricing models for implementing pricing policies

Profit—see **Operating profit** and **Net profit**

Profit and loss statement (P&L statement)—statement of revenue or net sales, cost of goods sold, expenses, and profit for a specified period of time; also known as an "income statement" or "operating statement"

Profit before taxes—see **Operating profit**

Quantity discount—discount allowed by a vendor when a large specified quantity of a product is purchased, or based on the total sum of purchases over a specified period of time; included in the invoiced (wholesale) cost; also known as a "patronage discount"

Psychographics—data describing consumers' personality traits, attitudes, interests, and opinions

Reductions—see **Retail reductions**

Retail calendar—a calendar that divides the year into 4-week and 5-week months; each quarter consists of a 4-week month, a 5-week month and a 4-week month, for a total of 26 weeks per season

Retail price—the price the consumer pays to the retailer for the merchandise; consists of the wholesale cost of the goods plus the markup

Retail pricing—the activities involved in planning and calculating the amount of money the retailer charges customers for a product or service

Retail reductions—reductions in the retail value of the merchandise, due to customer returns and allowances, employee discounts, markdowns, and shrinkage

Retailing—all the business activities involved in planning and procuring goods and services from vendors and pricing, positioning, presenting, packaging, promoting, and ultimately selling those goods to the target consumer

Returns to the vendor—the value of goods returned to the vendor because of defects or shipping errors

Sales per square foot method—sales volume is estimated from the square feet of selling space in the physical retail store, based on data from similar retailers

Sales volume—see **Net sales**

Seasonal merchandise—products that are in demand only during specific climatic conditions or a specific time of the calendar year

Shrinkage—the difference (shortage) between book inventory and physical inventory counts

Six-month merchandise plan—a financial plan (budget) relating planned sales, inventory levels, reductions, and intial markup percentage to planned purchases of inventory; used to set attainable retail objectives and to monitor performance

Skeletal profit and loss statement—a condensed profit and loss statement that omits details and includes only the essential information; contrast with **Expanded profit and loss statement**

Staple merchandise—see **Basic merchandise**

Stock—see **Inventory**

Stock keeping unit (SKU)—the unit of measure in which the inventory of a product is managed; can also refer to the SKU's unique identifier or code

Stock turn—see **Turnover**

Stock turnover—see **Turnover**

Stock/sales ratio (S/S ratio)—for a given period, the ratio of the value of the stock on hand to the sales volume; the number of dollars it takes to sell one dollar's worth of merchandise

Terms of sale—terms agreed upon between the vendor and retailer, such as delivery specifications, dating, or cash discounts

Total cost of goods sold—see **Cost of goods sold**

Trade discount—percentage discount from vendor's list price, often expressed as a series of discounts (each deducted separately); included in the invoiced cost

Transportation costs—the cost of transporting goods from the vendor to the retailer (including shipping insurance); generally paid by the retailer and included on the vendor's invoice

Turnover—the number of times that the average inventory on hand is sold and replaced during a given period; also known as "inventory turnover," "stock turnover," or "stock turn"

Vendor—source from which the retailer purchases goods; manufacturer, contractor, importer, jobber, wholesaler, or other retailer

Vendor allowances—compensation from the vendor to the retailer to promote sales, for example, to offset the costs of advertising, display, or markdowns; allowances usually reduce the cost of operations, rather than the cost of merchandise

Wholesale cost of goods—the amount the retailer pays the vendor for merchandise purchased to be sold at retail (invoiced or billed cost) plus the cost of transportation and shipping insurance; also known as the "gross wholesale cost of goods"

Workroom costs—the costs of preparing the merchandise for presentation on the sales floor, not including receiving costs; included along with alteration costs in calculation of the cost of goods sold

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Answer Key for Review Problems

Section 1

1. B
2. A
3. C
4. B
5. D
6. A
7. C
8. D
9. B
10. A

Section 2

1. A
2. C
3. D
4. A
5. B
6. C
7. D
8. B
9. A
10. C

Section 3

1. D
2. B
3. A
4. C
5. D
6. D
7. B
8. A
9. C
10. A
11. C
12. B
13. C
14. B
15. A

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