

## **SECTION 2: Manipulating Profit Variables: Merchandising for a Profit**

### **Part 2: Skeletal Profit and Loss Statement: Calculating the P & L Components**

#### **Part 2: 2-2 Net Sales**

The skeletal P & L Statement invisibly begins with gross sales *minus* customer returns and allowances. However, the calculation of gross sales minus customer returns and allowance are not illustrated on the skeletal P & L Statement format. **Gross sales** are the total retail price, both charge and cash, paid by the end consumer to the retailer for all merchandise and services before any deductions for customer returns and allowances. (The significance of gross sales as an integral entry on the expanded P & L Statement will be discussed in *Part 3: 3-1.*)

**Net sales** dollars are the result dollars from subtracting customer returns and allowances dollars from gross sales dollars. The net sales figure is the beginning entry on the skeletal P & L Statement and is the base for calculating the P & L 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”; at the “right time” for the store’s target consumers. In other words, the retail buyer knows the store’s target consumers, understands the consumer wants and demands, and knows what fashion level, quality of merchandise and price range to purchase in order to build a loyal, repeat customer following.

The basic formula for calculating net sales dollars is as follows:

$$\text{Net Sales \$} = \text{Gross Sales \$} - \text{Customer Returns \$} + \text{Allowances \$}$$

**For examples in Part 2 the following numerical values are utilized for calculations:**

#### **Example Figures for calculating the skeletal P & L Statement**

Gross Sales = \$210,000.00	Customer Returns + Allowances = \$10,000.00
Net Sales = \$200,000.00	Cost of Goods Sold = \$116,000.00
Gross Margin = \$84,000.00	Operating Expenses = \$72,000.00
(Net) Operating Profit = \$12,000.00	

**Problem:**

$$\text{Net Sales \$} = \text{Gross Sales \$} - \text{Customer Returns \$} + \text{Allowances \$}$$
$$\text{Net Sales \$} = \$210,000.00 - \$10,000.00$$
$$\text{Net Sales \$} = \$200,000.00$$

Net sales calculations can be compared to the retail price component calculations explained in **Section 1, Part 2: 2-1 Basic Retail Pricing Components**. (Refer to **Section 1** for a review of the retail pricing components.) For example, the basic retail price components consist of retail dollars, cost dollars and markup dollars (i.e., Retail \$ = Cost \$ + Markup \$). The first three skeletal P & L Statement components are composed of net sales dollars, cost of goods sold dollars, and gross margin dollars. Thus, the following formula can also be used to calculate net sales dollars.

$$\text{Net Sales \$} = \text{Cost of Goods Sold \$} + \text{Gross Margin \$}$$

**Problem:**

$$\text{Net Sales \$} = ?$$
$$\text{Cost of Goods Sold \$} = \$116,000.00$$

**Gross Margin \$ = \$84,000.00**

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

**Net Sales \$ = \$116,000.00 + \$84,000.00**

**Net Sales \$ = \$200,000.00**

A similar relationship exists between the first three P & L Statement components as does the relationship between the retail price components. Therefore, just as with the retail price components, if two of the first three components of the 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 \$**

Two other useful formulas for calculating components of the skeletal P & L Statement may be reviewed below.

**Cost of Goods Sold \$ = Net Sales \$ - Gross Margin \$**

**Gross Margin \$ = Net Sales \$ - Cost of Goods Sold \$**

**Problems: Cost of Goods Sold \$ = Net Sales \$ - Gross Margin \$**

**Cost of Goods Sold \$ = \$200,000.00 - \$84,000.00**

**Cost of Goods Sold \$ = \$ 116,000.00**

**Gross Margin \$ = Net Sales \$ - Cost of Goods Sold \$**

**Gross Margin \$ = \$200,000.00 - \$116,000.00**

**Gross Margin \$ = \$84,000.00**

As stated previously, all components on the P & L Statement are calculated in both **dollars** and **percents**. Since net sales are composed of all the retail price of goods that the consumers purchase, net sales, like retail price, are always 100% on the retailer's skeletal P & L Statement. Remember, many manufacturers and a few retailers use cost as a basis for calculating markup and the P & L Statement. In this course, **net sales** are always **100%** and are the **retail base** for calculating the relationship among the other P & L Statement components.

The following formula is used for calculating net sales percent:

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

**OR**

**Net Sales % = 100.00 %**

Additionally, percents for the other two P & L components, cost of goods sold and gross margin, may be calculated by substituting percents in the place of the dollars in the above formulas. The following formulas express the relationship of those components in percentages.

**Cost of Goods Sold % = Net Sales % - Gross Margin %**

$$\text{Gross Margin \%} = \text{Net Sales \%} - \text{Cost of Goods Sold \%}$$

And, another useful formula for calculating the percent for all P & L Statements components (i.e., cost of goods sold, gross margin, operating expenses, and net operating profit) is as follows:

$$\text{Component \%} = \text{Component \$} \div \text{Net Sales \$}$$

**Problem:** Calculate the component percent for gross margin.

$$\text{Gross Margin \%} = \text{Gross Margin \$} \div \text{Net Sales \$}$$

$$\text{Gross Margin \%} = \$84,000.00 \div \$200,000.00$$

$$\text{Gross Margin \%} = 42.00 \%$$

**Note:** The P & L Statement is frequently calculated on computer using a spreadsheet. In a business setting, mathematical symbols are not usually stated on a P & L Statement. However, for ease of calculating and understanding the interrelationship of the components, the appropriate mathematical symbols for each component's calculation will be included on the spreadsheets in this section.

Use the following sample spreadsheet and the example figures for calculating the missing components for the skeletal P & L Statement.

**Example Figures for calculating the skeletal P & L Statement**

Gross Sales = \$210,000.00	Customer Returns & Allowances = \$10,000.00
Net Sales = \$200,000.00	Cost of Goods Sold = \$116,000.00
Gross Margin = \$84,000.00	Operating Expenses = \$72,000.00
(Net) Operating Profit = \$12,000.00	

**Profit and Loss Statement Form**

Component	Dollars (\$)	Percent (%)
Net Sales	\$200,000.00	100.00%
- Cost of Goods Sold	\$116,000.00	58.00%
= Gross Margin	\$84,000.00	42.00%
- Operating Expenses		
= (Net) Operating Profit		

1. Calculate Net Sales \$. (Many times gross sales and customer returns and allowance are not given; therefore, the formula below is needed to calculate the net sales.)

$$\text{Net Sales Dollars} = \text{Cost of Goods Sold \$} + \text{Gross Margin \$}$$

$$\text{Net Sales Dollars} = \$116,000.00 + \$84,000.00$$

$$\text{Net Sales Dollars} = \$200,000.00$$

$$\text{Net Sales \%} = 100.00 \%$$

2. Calculate cost of goods sold dollars if gross margin dollars are \$84,000.00.

$$\begin{aligned}\text{Cost of Goods Sold \$} &= \text{Net Sales \$} - \text{Gross Margin \$} \\ \text{Cost of Goods Sold \$} &= \$200,000.00 - \$84,000.00 \\ \text{Cost of Goods Sold \$} &= \$ 116,000.00\end{aligned}$$

3. Calculate gross margin dollars if cost of goods sold dollars are \$116,000.00

$$\begin{aligned}\text{Gross Margin \$} &= \text{Net Sales \$} - \text{Cost of Goods Sold \$} \\ \text{Gross Margin \$} &= \$200,000.00 - \$116,000.00 \\ \text{Gross Margin \$} &= \$84,000.00\end{aligned}$$

4. Calculate a) net sales percent, b) the cost of goods sold percent, and c) the gross margin percent for the above components of the skeletal P & L Statement.

$$\begin{aligned}\text{a) Net Sales \%} &= \text{Cost of Goods Sold \%} + \text{Gross Margin \%} \\ \text{Net Sales \%} &= 58.00 \% + 42.00 \% \\ \text{Net Sales \%} &= 100.00 \%\end{aligned}$$

$$\begin{aligned}\text{b) Cost of Goods Sold \%} &= \text{Net Sales \%} - \text{Gross Margin \%} \\ \text{Cost of Goods Sold \%} &= 100.00 \% - 42.00 \% \\ \text{Cost of Goods Sold \%} &= 58.00 \%\end{aligned}$$

OR

$$\begin{aligned}\text{Cost of Goods Sold \%} &= \text{Cost of Goods Sold \$} \div \text{Net Sales \$} \\ \text{Cost of Goods Sold \%} &= \$116,000.00 \div \$200,000.00 \\ \text{Cost of Goods Sold \%} &= 58.00 \%\end{aligned}$$

$$\begin{aligned}\text{c) Gross Margin \%} &= \text{Net Sales \%} - \text{Cost of Goods Sold \%} \\ \text{Gross Margin \%} &= 100.00 \% - 58.00 \% \\ \text{Gross Margin \%} &= 42.00 \%\end{aligned}$$

OR

$$\begin{aligned}\text{Gross Margin \%} &= \text{Gross Margin \$} \div \text{Net Sales \$} \\ \text{Gross Margin \%} &= \$84,000.00 \div \$200,000.00 \\ \text{Gross Margin \%} &= 42.00 \%\end{aligned}$$

In summary, if there are numerical values for two of the first three components (i.e., net sales, cost of goods sold, and gross margin dollars) of the skeletal P & L Statement, those values can be manipulated in order to calculate for the third unknown component. These calculations are similar to those for solving for an unknown component (i.e., retail price, wholesale cost, markup dollars) in the retail price formula. For example, many times the retailer knows the net sales for a particular department or store and knows what gross margin was planned. Using those two figures, he can calculate the amount of cost of goods sold dollars that should be made available. These values are based on retail and are expressed in both dollars and percents as are the retail price components.

In *Part 2-3* Cost of Goods sold will be detailed, and in *Part 2-4*, Gross Margin will be discussed.