

# **SOLVING DISCOUNT, ORIGINAL PRICE, DISCOUNT RATE, AND SALE PRICE**

The following terms are important for understanding and solving discount problems. Read and analyse them carefully, as they will assist you throughout this lesson.

**Discount (D)** refers to a reduction in the price of an item, representing the amount subtracted from the original price.

**Original Price (OP)** is the regular or initial cost of the item.

**Discount Rate (DR)** is the percentage taken off from the original price.

**Sale Price (SP)** is the final price after the discount has been applied, also known as the net or discounted price.

Both **Discount** and **Sale Price** are expressed as percentages, while the **Original Price** represents the base amount. The **Discount Rate** indicates the percentage deducted from the original price.

# Solving for Discount and Sales Price

## Example 1:

A store is selling a jacket with an original price of ₱800.00. If the store offers a 25% discount on the jacket, what is the discount amount and the sale price?

**Solution:**

**DR = 25%, OP = ₱800.00, D = ?, SP = ?**

**Calculate the Discount Amount:**

**Discount (D) = Original Price (OP) ×  
Discount Rate (DR) or  $D = OP \times DR$**

$$\begin{aligned} D &= ₱800.00 \times 25\% \\ &= ₱800.00 \times 0.2 \\ &= ₱200.00 \end{aligned}$$

**Answer: The discount amount is ₱200.00**

## Calculate the Sale Price:

Sale Price (SP) = Original Price (OP)  
- Discount (D) or  $SP = OP - D$

$$\begin{aligned} SP &= ₱800.00 - ₱200.00 \\ &= ₱600.00 \end{aligned}$$

Answer: The discount is ₱200.00 and  
the sale price is ₱600.00

# Solving for Original Price

## Example 2:

The sale price of a shirt is ₱1,200.00 after a 80% discount. What was the original price of the shirt?

**Solution: DR = 80%, SP = ₱1,200, OP = ?**

Calculate the Original Price:

Sale Price (SP) = Original Price (OP)  $\times$  (100% – DR)  
or  $SP = OP \times (100 - DR)$

$$SP = OP \times (100\% - 80\%)$$

$$\text{₱}1,200.00 = OP \quad 80\% \quad \text{substitute the given}$$

$$\text{₱}1,200.00 = OP \quad 0.80 \quad \text{change } 80\% \text{ to decimal}$$

$$\frac{OP \times 0.80}{0.80} = \frac{1200}{0.80} \quad \text{exchange and divide both sides by } 0.80.$$

$$OP = \text{₱}1,500.00$$

Answer: The Original Price of a shirt is ₱1,500.00