Applications of Percent

The Basic Percent Equation

$$\text{Percent} \cdot \text{Base} = \text{Part}$$

Example

$$\underset{60\%}{\text{Percent}} \cdot \underset{of}{\text{Base}} = \underset{\$200}{\text{Part}} \quad \underset{is}{} \quad \underset{\$120}{}$$

Note: When solving percent problems, we need to identify the quantities that represent the percent, the base, or the part.

- The percent (or the rate), will have the percent symbol % next to it.
- The base will have the word "of" in front, and/or will represent the total or the original quantity.
- The part, will have the word "is" in front, and/or will represent a part of the base.

To Find the Part	To Find the Percent	To Find the Base
$\text{Part} = \text{Percent} \cdot \text{Base}$	$\text{Percent} = \frac{\text{Part}}{\text{Base}}$	$\text{Base} = \frac{\text{Part}}{\text{Percent}}$

Applications of Percent

A meal at a restaurant costs $\$14.60$. You would like to pay a 15% tip. What would the tip be?

Solution

The percent is $15\% = 0.15$.
The base is $\$14.60$.
The part is unknown.

$$\text{Part} = \text{Percent} \cdot \text{Base}$$
$$\text{Part} = 0.15 \cdot 14.60$$
$$\text{Part} = 2.19$$

The tip will be $\$2.19$.

Lisa received $\$250$ interest from an investment account that paid 5% annual interest. What is the amount of money invested in this account?

Solution

The percent is $5\% = 0.05$.
The base is unknown.
The part is $\$250$.

$$\text{Base} = \frac{\text{Part}}{\text{Percent}}$$
$$\text{Base} = \frac{250}{0.05}$$
$$\text{Base} = \$5000$$

The amount of money in the account is $\$5000$.

A farm has 240 domestic animals. 60 of them are sheep. What percent of the total are the sheep?

Solution

The percent is unknown.
The base is 240.
The part is 60.

$$\text{Percent} = \frac{\text{Part}}{\text{Base}}$$
$$\text{Percent} = \frac{60}{240}$$
$$\text{Percent} = 0.25 = 25\%$$

Sheep represent 25% of the total.