# ANSWERS

# PERCENT PROPORTION

Solve each problem by writing and solving a proportion. Show all steps and round your answer to the nearest tenth if necessary.

**Steps to Solve a Proportion**

1. Set up the Proportion: Write the two ratios as fractions equal to each other. $\frac{A}{B} = \frac{C}{D}$
2. Cross-Multiply: Multiply diagonally across the equal's sign. $A \times D = B \times C$
3. Solve for the Variable: Divide to find the unknown value. Unknown: $\frac{Product\ of\ Known\ Values}{Other\ Known\ Value}$
4. Round: Round your answer to the nearest tenth if needed.

a) A bus travels 180 miles in 3 hours. How many miles will it travel in 8 hours?

**Solution:**

1. Set up the proportion: $\frac{180\ miles}{3\ hours} = \frac{x\ miles}{8\ hours}$
2. Cross-multiply: $180 \times 8 = 3 \times \mathbb{X}$
3. Solve for the Variable: $1440 = 3\ \mathbb{X} \Rightarrow \frac{1440}{3} \Rightarrow \mathbb{X} = 480$
4. Answer: **The bus will travel 480 miles in 8 hours.**

b) A machine produces 90 units in 15 minutes. How many units will it produce in 2 hours (120 minutes)?

**Solution:**

1. Set up the proportion : $\frac{90\ units}{15\ minutes} = \frac{x\ units}{120\ minutes}$
2. Cross-multiply: $90 \times 120 = 15 \times \mathbb{X}$
3. Solve for the Variable: $10800 = 15\ \mathbb{X} \Rightarrow \frac{10800}{15} \Rightarrow \mathbb{X} = 720$
4. Answer: **The machine will produce 720 units in 2 hours.**

c) A tank fills 250 liters of water in 5 hours. How many liters of water will it fill in 12 hours?

**Solution:**

1. Set up the proportion: $\frac{250\ liters}{5\ hours} = \frac{x\ liters}{12\ hours}$
2. Cross-multiply: $250 \times 12 = 5 \times \mathbb{X}$
3. Solve for the Variable: $3000 = 5\ \mathbb{X} \Rightarrow \frac{3000}{5} \Rightarrow \mathbb{X} = 600$
4. Answer: **The tank will fill 600 liters of water in 12 hours.**

How Did You Do?