

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100}$$

$$\frac{15}{\text{of}} = \frac{9\%}{100}$$

Name Solutions

### Solving Percent Problems

1. How do these differ? Discuss with your neighbor.

a. What is 8% of 300?

$$\frac{x}{300} = \frac{8}{100}$$

$$\frac{100x}{100} = \frac{8(300)}{100} \quad x = 24$$

b. 8% of what is 300?

$$\frac{300}{x} = \frac{8}{100}$$

$$\frac{8x}{8} = \frac{300(100)}{8} \quad x = 3750$$

2. How do these differ? Discuss with your neighbor.

a. 18 is what percent of 30?

$$\frac{18}{30} = \frac{x}{100}$$

#2 Shortcut

$$\frac{18}{30} = 0.60 \rightarrow 60\%$$

b. What percent of 30 is 18?

$$\frac{18}{30} = \frac{x}{100}$$

$$\frac{30x}{30} = \frac{18(100)}{30} \quad x = 60\%$$

Translate the following to a percent equation or percent proportion. Then solve.

3. x is 32% of 51.2?

$$\frac{x}{51.2} = \frac{32}{100}$$

$$\frac{100x}{100} = \frac{32(51.2)}{100}$$

#3 Shortcut

$$.32(51.2) = 16.384$$

4. 9 is 40% of what number?

$$\frac{9}{x} = \frac{40}{100}$$

$$x = 16.384 \approx 16.38$$

$$\frac{40x}{40} = \frac{9(100)}{40} \quad x = 22.5$$

5. 50 is what percent of 90?

$$\frac{50}{90} = \frac{x}{100}$$

$$\frac{90x}{90} = \frac{50(100)}{90} \quad x \approx 55.55$$

6. The PCC Foundation has raised \$225,000 for scholarships, with a goal of raising \$500,000. What percent of the goal has been raised?

$$\frac{225,000}{500,000} = \frac{x}{100} \quad \frac{500,000x}{500,000} = \frac{225,000(100)}{500,000}$$

They have raised 45% of their goal.  $x = 45\%$

7. The enlarge feature on a copier is set at 150%, and a 2.5-inch side picture is to be copied. What width will the width of the enlarged picture be?

$$\frac{x}{2.5} = \frac{150}{100} \quad \text{larger over original}$$

$$\frac{100x}{100} = \frac{150(2.5)}{100}$$

$$x = 3.75 \text{ inches}$$

The width of the larger picture is 3.75 inches.

Percent Problem Puzzles

Name \_\_\_\_\_

Here is (the start of) a student's answer.

What was the question?

Example:  $x = 0.40 \cdot 5$

What is 40% of 5?

1.  $5 = 0.13 \cdot x$

2.  $\frac{15}{16} = x$

3.  $120 \cdot 0.02 = x$

4.  $\frac{x}{13.5} = \frac{43}{100}$

What is 43% of 13.5?

5.  $\frac{45}{x} = \frac{60}{100}$

45 is 60% of what?

6.  $\frac{3}{7} = \frac{x}{100}$

3 is what % of 7?

7.  $0.04 \cdot 50 = x$

8.  $x = 12 \cdot 0.2$