

### 3.7 Warm-Up

**Write the percent as a decimal.**

1. 27%     . 27
2. 54.5%     . 545

**Solve the proportion.**

3.  $\frac{6}{25} = \frac{12}{n}$

$$6n = 12 \cdot 25$$

$$\frac{6n}{6} = \frac{300}{6}$$

$$n = 50$$

4.  $\frac{y}{18} = \frac{5}{8}$

$$8y = 18 \cdot 5$$

$$\frac{8y}{8} = \frac{90}{8}$$

$$y = 11.25$$

5. A tennis ball machine throws 2 balls every 3 seconds. How many balls will the machine throw in 18 seconds?

$$\frac{2}{3} = \frac{x}{18}$$

$$3x = 36$$

$$x = 12 \text{ balls.}$$

What does "percent" mean?

out of 100

How could we write a percent as a fraction?

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

27%

→

$$\frac{27}{100}$$

Use a proportion to solve.

What percent of 25 is 17?

↑  
total

↑  
part

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

part →

$$\frac{x}{100} = \frac{17}{25}$$

whole →

$$\cancel{100} \frac{x}{\cancel{100}} = \frac{17}{25} \cdot 100$$

$$x = \frac{17}{\cancel{25}} \cdot \frac{\cancel{100}}{1} 4$$

$$x = 68\%$$

What percent of 20 is 15?

$$\frac{x}{100} = \frac{15}{20}$$

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

$$\frac{x}{100} = \frac{3}{4}$$

$$4x = 3 \cdot 100$$

$$\frac{4x}{4} = \frac{300}{4}$$

$$x = 75\%$$

What number is 30% of 90?

$$\frac{30}{100} = \frac{x}{90}$$

$$\cancel{90} \cdot \frac{3}{\cancel{10}} = \frac{x}{\cancel{90}} \cdot \cancel{90}$$

$$27 = x$$

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

What percent of 60 is 9?

$$\frac{x}{100} = \frac{9 \div 3}{60 \div 3}$$

$$\cancel{100} \frac{x}{\cancel{100}} = \frac{3}{20} \cdot \cancel{100} 5$$

$$x = 15\%$$

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

Use the percent equation.

What percent of 136 is 51?

$$\frac{X \cdot 136}{136} = \frac{51}{136}$$

$$X = 37.5$$

$$X = 37.5\%$$

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

whole



What number is 15% of 88?

$$x = .15 \cdot 88$$

$$x = 13.2$$

whole ↓

What percent of 56 is 49?

$$\frac{x}{100} \cdot 56 = 49 \div 56$$

$$\frac{x}{100} = .875$$

$$x = 87.5\%$$

What number is 45% of 92?

← whole

$$x = .45 \cdot 92$$

$$x = 41.5$$

whole ↓  
What percent of 55 is 11?

$$\frac{x}{100} = \frac{\cancel{11}}{\cancel{55}} \cdot \frac{1}{5}$$

$$x = 20\%$$

$$5x = 1 \cdot 100$$

$$5x = 100$$

whole ↓  
What number is 140% of 50?

$$x = 1.40 \cdot 50$$

$$x = 70$$

$$\frac{140}{100} = \frac{x}{50}$$

whole



20 is 12.5% of what number?

$$\frac{12.5}{100} = \frac{20}{x}$$

$$12.5x = 100 \cdot 20$$
$$\frac{12.5x}{12.5} = \frac{2000}{12.5}$$
$$x = 160$$

whole



75 is 62.5% of what number?

$$\frac{62.5}{100} = \frac{75}{x}$$

$$\frac{62.5x}{62.5} = \frac{7500}{62.5}$$
$$x = 120$$

65 is 62.5% of what number?

$$\frac{62.5}{100} = \frac{65}{x}$$

$$65 \cdot 100$$

$$\frac{62.5x}{62.5} = \frac{6500}{62.5}$$

$$x = 104$$

50 is 125% of what number?

$$\frac{x}{100} = \frac{\cancel{50}}{\cancel{125}} \cdot \frac{2}{5}$$

$$\frac{125}{100} = \frac{50}{x}$$

$$\frac{5x}{5} = \frac{200}{5} \quad x = 40$$

**SURVEY** A survey asked 220 students to name their favorite pasta dish. Find the percent of students who chose the given pasta dish.

a. macaroni and cheese

b. lasagna

Type of Pasta	Students
Spaghetti	83
Lasagna	40
Macaroni and cheese	33
Fettucine alfredo	22
Baked ziti	16
Pasta primavera	15
Other	11

total ppl = 220

$$a. \frac{x}{100} = \frac{33}{220}$$

$$x = 15\%$$

$$b. \frac{x}{100} = \frac{40}{220} \quad x = \frac{4000}{220}$$

$$220x = 4000 \quad x = 18.2\%$$



Homework:

p 179-180

#'s 2-22 E, 26-29, 33-36