

Do Now: Complete without a calculator.

$$1) 200 * 28 = 5600$$

$$2) 400 * 42 = 16800$$

$$3) 300 * \frac{16}{100} = 48$$

$$4) 200 * \frac{72}{100} = 144$$

7.2 Percents and Proportions

7.RP
7.EE
8.EE

- SWBAT use proportions to solve percent problems.
- SWBAT represent and analyze situations using algebraic symbols.

Calculators: Yes

Solving Percent Problems

You can represent "a is p percent of b" using the following:

$$\frac{\text{is}}{\text{of}} = \frac{p\%}{100} \quad \frac{a}{b} = \frac{p\%}{100}$$

where a is a part of the base b and $p\%$, or $p/100$, is percent.

What percent of 7 is 4?

$$\frac{\text{is}}{\text{of}} = \frac{p\%}{100}$$

$$\frac{4}{7} = \frac{x}{100}$$

$$7x = 4(100)$$

$$7x = 400$$

$$x = \frac{400}{7}$$

$$x = 57.1$$

$$57.1\%$$

① What percent of 72 is 54?

75%

② What percent of 90 is 40?

44.4%

What number is 24% of 200?

$$\frac{\text{is}}{\text{of}} = \frac{p\%}{100}$$

$$\frac{y}{200} = \frac{24}{100}$$

$$100y = 24(200)$$

$$\frac{100y}{100} = \frac{4800}{100}$$

$$y = 48$$

48

$$\frac{48}{200} = 0.24 \text{ or } 24\%$$

What number is 45% of 400?

180

What number is 18% of 50?

9

105 is 84% of what number?

$$\frac{\text{is}}{\text{of}} = \frac{p\%}{100}$$

$$\frac{105}{x} = \frac{84}{100}$$

$$84x = 105(100)$$

$$\frac{84x}{84} = \frac{10,500}{84}$$

$$x = 125$$

125

$$\frac{105}{125} = 0.84 \text{ or } 84\%$$

① 20 is 30% of what number?

$$\textcircled{66.\bar{6}}$$

② 18 is 45% of what number?

$$\textcircled{40}$$

Use a proportion to answer the question in terms of y.

What percent of 8y is 32?

$$\frac{\text{is}}{\text{of}} = \frac{p\%}{100}$$

$$\frac{32}{8y} = \frac{x}{100}$$

$$8yx = 32(100)$$

$$\frac{8yx}{8y} = \frac{3200}{8y}$$

$$x = \frac{3200}{8y}$$

$$x = \frac{400}{y}$$

$$\frac{400}{y} \%$$

Use a proportion to answer the question in terms of y.

What number is 24% of y?

Use a proportion to answer the question in terms of y.

5y is 48% of what number?

In a heptathlon, an athlete earns points in seven track-and-field events. Suppose an athlete earns 836 points in the 100 meter hurdles. This score makes up 16% of the total score. What is the total score?

In a dog agility competition, dogs are tested in their ability to get past obstacles. The table shows the number of dogs from each breed that competed in a dog agility competition.

a.) What percent of the dogs that competed were spaniels? sheepdogs?

b.) In the competition, 70% of the dogs that finished in the top half were sheepdogs. What percent of the sheepdogs finished in the top half?

Dog Breed	Number that Competed
Sheepdog	75
Spaniel	24
Terrier	14
Other	7

Exit Pass 7.2

Describe and correct the error in finding what percent of 30 is 20.

$$\frac{a}{30} = \frac{20}{100}$$

$$100 * a = 30 * 20$$

$$100a = 600$$

$$a = 6$$

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg. 89 #1-11 odds, 13-20



Reflection of Today's Lesson**7.2 Percents and Proportions**

7.RP
7.EE
8.EE

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- SWBAT represent and analyze situations using algebraic symbols.

Calculators: Yes

Homework

pg. 337 #9-17

