

Name: Key

Date:

Topic:

Class:

Main Ideas/Questions

Notes/Examples

Proportion WORD PROBLEMS

Proportions can be used to solve word problems in which there is a constant rate. It's very important to **STAY CONSISTENT** when setting up your proportion. The units must match on each side of the equal sign. Which of the following equations is a valid proportion?

$$\frac{\text{miles}}{\text{hours}} = \frac{\text{hours}}{\text{miles}}$$

$$\frac{\text{miles}}{\text{hours}} = \frac{\text{miles}}{\text{hours}}$$

Helpful Hint: Set up a key when writing proportions to make sure the units stays consistent.

Directions: Solve each word problem using a proportion. Round to the nearest tenth or cent when necessary.

1. Pete drove 224 miles in 4 hours on Saturday. If he drives at the same rate on Sunday, how long would it take him to drive 490 miles?

$$\frac{224}{4} = \frac{490}{x}$$

$$x = 8.75 \text{ hours}$$

2. Approximately 4 out of 5 students in Mrs. Haynes 7th grade math class have cell phones. If there are 365 students in the 7th grade, how many would you expect to have a cell phone?

$$\frac{4}{5} = \frac{x}{365}$$

$$x = 288 \text{ students}$$

3. A 100-ounce jug of liquid laundry detergent can wash 64 loads of laundry. How many loads could a 150-ounce jug of detergent wash?

$$\frac{100}{64} = \frac{150}{x}$$

$$x = 96 \text{ loads}$$

4. It takes $1\frac{1}{4}$ cups of milk to make 8 pancakes. How many cups of milk are needed to make 20 pancakes?

$$\frac{1\frac{1}{4}}{8} = \frac{x}{20}$$

$$x = 3.125 \text{ cups}$$

$$\text{or}$$

$$3\frac{1}{8}$$

5. Melanie can run around the track 9 times in 28 minutes. At this rate, how many laps can she run in 1 hour and 15 minutes?

$$\frac{9}{28} = \frac{x}{75}$$

$$x = 24.1 \text{ laps}$$

6. An online store receives 15 orders per day. At this rate, how many orders can they expect in the month of September?

$$\frac{15}{1} = \frac{x}{30}$$

$$x = 450 \text{ orders}$$

7. Trey made 12 out of 30 free-throw shots on the basketball court. If he attempts 75 free-throw shots, how many could he expect to make?

$$\frac{12}{30} = \frac{x}{75}$$

$$x = 30 \text{ free throws}$$

8. Jack bought three binders from the store and paid \$13.17. If he goes back to the store to purchase five more binders, how much total will he have spent on binders?

$$\frac{3}{13.17} = \frac{8}{x}$$

$$x = \$35.12$$

9. It costs \$135.25 for 15 child tickets to the museum. Adult tickets cost \$12.95 each. Find the cost for 40 children to attend along with 5 adult chaperones.

$$\frac{135.25}{15} = \frac{x}{40} + 12.95(5)$$

$$\$360.67 + \$64.75$$

$$\$425.42$$

10. Emily typed 456 words in 8 minutes. Her friend Mary typed 32 fewer words in the same time frame. At the same rate, how long would it take Mary to type 954 words?

$$\frac{424}{8} = \frac{954}{x}$$

$$x = 18 \text{ minutes}$$

11. Carrie sent 190 total text messages in the first five days of May. If text messages cost 4¢ each, much should she expect to pay that month?

$$\frac{190}{5} = \frac{x}{31}$$

$$x = 1178 \text{ messages}$$

$$\$47.12$$

12. Seven candy bars cost \$6.23 and three sodas cost \$4.47. Find the total cost for five candy bars and four sodas.

$$\frac{7}{6.23} = \frac{5}{x} + \frac{3}{4.47} = \frac{4}{x}$$

$$\$4.45 + \$5.96$$

$$\$10.41$$