

Name: KEY Period: _____ Date: _____

(49 pts) **Course 2 Unit 5 Review Packet**

Show your work!! (All problems are 2 pts unless otherwise noted. 1 pt for work shown, 1 pt for the answer)

1. Write the ratio 5 : 43 in two other ways. (2 points)

$$\frac{5}{43} \quad 5 \text{ to } 43$$

Write each ratio in simplest form. (1 pt. each)

2. $\frac{9 \div 3}{30 \div 3} = \frac{3}{10}$

3. $\frac{99 \div 3}{33 \div 3} = \frac{33}{11}$

4. $\frac{75 \div 5}{20 \div 5} = \frac{15}{4}$

5. Determine whether the ratios in each pair are proportional.

a. 1 : 10; 2 : 5
 $\frac{1}{10} \times \frac{2}{5} = \frac{2}{50} \neq \frac{20}{50}$ No

b. 4 to 7; 28 to 49
 $\frac{4}{7} \times \frac{28}{49} = \frac{112}{343} \neq \frac{28}{49}$ Yes

6. During a recent Olympics, the United States won 97 medals, including 39 gold medals. Write the ratio of gold medals to total medals in three ways. (3 pts.)

39:97 39 to 97 $\frac{39}{97}$

Write a unit rate for each situation.

7. \$136 for 34 kg
 $\frac{\$136}{34 \text{ kg}} = \frac{\$4}{1 \text{ kg}}$

8. 414 students in 18 classrooms
 $\frac{414 \text{ students}}{18 \text{ classrooms}} = \frac{23 \text{ students}}{1 \text{ classroom}}$

9. A 10-oz box of cereal costs \$2.79. A 13-oz box of the same brand of cereal costs \$3.99. Find the unit cost for each item and determine which is the better buy. (3 pts.)

$$\frac{\$2.79}{10 \text{ oz}} = \$0.279/\text{oz}$$

$$\frac{\$3.99}{13 \text{ oz}} = 0.307/\text{oz}$$

10. A carpenter renovating a house is sanding the dining room floor. She sands 300 ft² of wood floor in 1 hr 40 minutes. What is the unit rate in square feet per minute?

$\frac{300 \text{ ft}^2}{100 \text{ min}} = 3 \text{ ft}^2/\text{min}$ 100min

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Solve each proportion.

11. $\frac{3}{7} = \frac{n}{28}$
 $\times 4$
 $n = 12$

12. $\frac{6}{5} = \frac{x}{7}$
 $\times 5$
 $5x = 42$
 $x = 8.4$

13. $\frac{a}{18} = \frac{24}{15}$
 $\times 1.2$
 $a = 2.88$

14. $\frac{32}{c} = \frac{4}{17}$
 $\times 8$
 $c = 136$

15. A local lumberyard sells a total of 250,000 board feet of hardwood each year. The ratio of softwood sold to hardwood sold is 5 : 3. How much softwood is sold each year? Round your answer to the nearest thousand.

$$\frac{\text{softwood}}{\text{hardwood}} = \frac{5}{3} = \frac{x}{250,000}$$

416,667 board feet

16. The ratio of the width of a rectangle to its length is 5 : 8. What is the width in feet if the length is 12 feet?

$$\frac{\text{width}}{\text{length}} = \frac{5}{8} = \frac{x}{12}$$

x = 7.5 feet

17. Jorge can jog 2 miles in 16 minutes. Is it reasonable to assume that it will take him 24 minutes to jog 3 miles? Explain.

$$\frac{2 \text{ mi}}{16 \text{ min}} = \frac{3 \text{ mi}}{24 \text{ min}}$$

$$\frac{1}{8} = \frac{1}{8}$$

yes, he can jog 1 mile in 8 minutes

18. Last month, your electric bill was \$25.32 for 450 kilowatt-hours of electricity. At that rate, what would be the bill for 240 kilowatt-hours?

$$\frac{\$25.32}{450 \text{ kwh}} \approx .05626 \cdot 240 \approx \$13.50$$

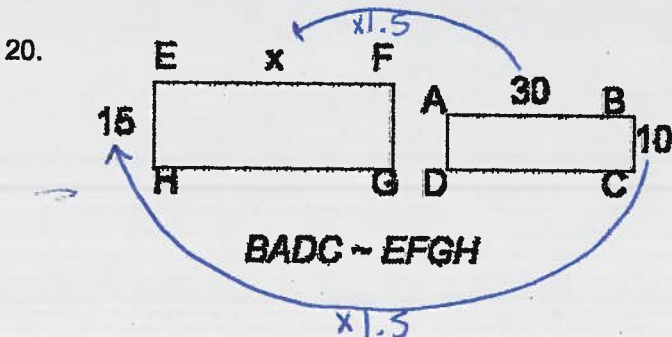
kwh per hr.

19. A fire hydrant is 30 inches tall and casts a shadow 8 inches long. How tall is a nearby tree that casts a shadow 4 feet long?



15 ft

These figures are similar. Find the missing value.



x = 45

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21. The scale on a map is 1 in. : 525 mi. The map distance from Chicago to Tokyo is 12 in. Find the actual distance between the cities.

$$\frac{1 \text{ in}}{525 \text{ mi}} \times 12 = 12 \text{ in}$$
$$\boxed{6,300 \text{ mi}}$$

22. A drawing's scale is 0.5 in. : 10 ft. A room is 15 ft long. How long is the room on the drawing?

$$\frac{0.5 \text{ in}}{10 \text{ ft}} \times 15 = \boxed{.75 \text{ in}}$$
$$15 \text{ ft} \times 1.5 = 15 \text{ ft}$$

23. The scale of a map is 2.5 cm : 40 km. Find the actual distance for each map distance. Round your answer to the nearest tenth if necessary.

$$15 \text{ cm} = \underline{240 \text{ km}}$$

$$\frac{2.5 \text{ cm}}{40 \text{ km}} \times 15 = \boxed{240 \text{ km}}$$

24. Suppose you are making a scale drawing of a giraffe that is 5.5 m tall. The drawing is 7 cm tall. Find the scale of the drawing.

~~Scale: actual~~
Scale: actual

$$\boxed{7 \text{ cm} : 5.5 \text{ m}}$$