Math 6+ Study Guide Name Key

1. Sam looked in the fridge and saw 9 cans of Coke, 3 cans of Dr. Pepper, 5 cans of Sprite, and 6 cans of Root Beer. What is the ratio of cans of Root Beer to cans of Coke?

$\frac{6 \text{ root}}{9 \text{ coke}} = \frac{2}{3}$

What is the ratio of cans of Dr. Pepper to total cans of soda? $\frac{3 \text{ pep}}{23 \text{ total}}$

2. Gemma spends 4 hours each week playing soccer and 3 hours each week practicing clarinet. Write the ratio of hours spent practicing clarinet to hours spent playing soccer in three different ways.

$\frac{3c}{4s}$ 3c to 4s 3c : 4s

3. Delina used the grocery sale ads to list apple prices at 4 stores.

- Gordan's: 4 pounds for $3.32
- Greenwise: 2 pounds for $1.62
- PJ's: 3 pounds for $2.38
- Tosko: $4.50 for 5 pounds

Which store charges the least amount per pound? Gor $\frac{\$.83}{}$ Green $\frac{\$.81}{}$ PJ $\frac{\$.79}{}$ Tos $\frac{0.9}{}$

4. Kenzie bought 28 ounces of trail mix for $3.92. What is the unit rate?

$\frac{\$3.92}{28 oz} = \frac{\$0.14}{1 oz}$ $\$0.14$ per oz

5. Christina takes a 6 minute break after every 24 minutes of study. Benedict takes an 8 minute break after every 32 minutes of study. Are their ratios of study time to break time equivalent? yes $\frac{24}{6} = \frac{4}{1}$ $\frac{32}{8} = \frac{4}{1}$

6. If 5 bags of oranges weighs 35 pounds, how many pounds do 2 bags of oranges weigh?

$\frac{5 b}{35 p} = \frac{2 b}{x}$ $x = 14$ pounds

7. On a map of North Carolina, 2 inches represent 54 miles. The map distance from Raleigh to Greensboro is 2.5 inches. What is the distance, in miles, between the cities?

$\frac{2 in}{54 mi} = \frac{2.5 in}{x}$ $x = 67.5$

8. Find the unit rate (miles per minute). You drive 168 miles in 3 hours and 15 minutes.

$\frac{168 mi}{195 min} = \frac{0.86 mi}{1 min}$

9. The cost of 5 CDs is $42. At this rate, what is the cost of 7 CDs?

$\frac{5 cd}{\$42} = \frac{7 cd}{x}$ $x = \$58.80$

10. A 20-lb bag of dog food costs $21.50. A 30-lb bag of the same dog food costs $32.90. Find each unit price. Then determine the better buy.

20 lb. $\frac{\$21.50}{20 lb.} = \frac{\$1.08}{1 lb.}$ $\frac{\$32.90}{30} = \frac{\$1.10}{1 lb.}$

11. Ashley is making fruit punch using cans of concentrate and water. The recipe calls for a ratio of 3 cans of concentrate to 4 cans of water. If she needs to make 56 cans of fruit punch for a party, how many cans of concentrate does she need? How many cans of water does she need?

$\frac{24 \text{ con}}{32 \text{ water}}$

12. The Crayola crayon company can make 2400 crayons in 4 minutes. How many crayons can they make in 15 minutes?

$\frac{2400 c}{4 min} = \frac{x}{15 min}$ $x = 9000 c$

13. A typist can type 120 words in 100 seconds. At that rate, how many seconds would it take her to type 258 words?

$\frac{120w}{100s} = \frac{258w}{x}$ $x = 215$ sec.

14. Measuring miles on the ocean (nautical miles) is different from "normal" miles on land (statute miles). In fact, 100 nautical miles is equal to 115 statute miles. If you plan on going 92 statute miles, how many nautical miles would you have to travel?

$\frac{100\text{ nm}}{115\text{ sm}} = \frac{x}{92\text{ sm}}$ $x = 80$nm

15. Paul's eraser has a mass of 40 ounces. How many grams is that if 1 gram equals 0.04 ounces.

$\frac{40\text{oz}}{x} = \frac{.04\text{oz}}{1g}$ $x = 1000g$

16. A box contains 6 bags of sugar. The total mass of all 6 bags is 8 kilograms. What is the mass of ***each*** bag in pounds if 1 kilogram equals 2.2 pounds?

$\frac{8Kg}{x} = \frac{1\text{ Kg}}{2.2\text{lbs}}$

$\frac{17.6}{6} = 2.93$ lbs.

17. Suzie has to take 3.5 milliliters of medicine. How many teaspoons is that if 1 teaspoon equals 5 milliliters.

$\frac{1t}{5\text{ mL}} = \frac{x}{3.5\text{ mL}}$ $x = 0.7t$

18. Lindsey is training for a half marathon. She needs to run 16 kilometers today. How many miles is that if 1 kilometer equals 0.6 of a mile?

$\frac{1\text{ Km}}{0.6\text{ m}} = \frac{16\text{km}}{x}$ $x = 9.6$mi

19. Alison has been going to the gym. She can lift a weight that has a mass of 44 pounds. How many kilograms is that? 1 kilogram = 2.2 pounds.

$\frac{1\text{ Kg}}{2.2\text{ lbs}} = \frac{x}{44\text{ lbs}}$

$x = 20$ Kg

20. A dog walker charges $10 to let your dog out plus $12 per half hour. Does this represent a proportional relationship? Explain.

No, not consistent

21. Does the following table represent a proportional relationship?

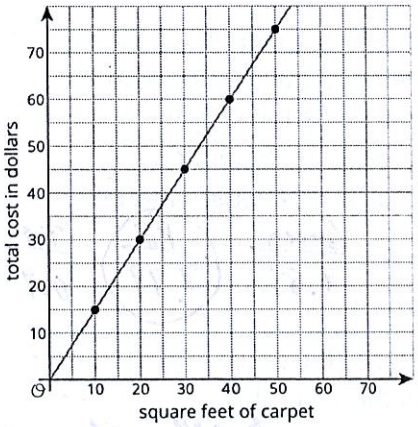
No

x	0	1	2	3
y	1	3	5	7

22. Does y = 1/2x represent a proportional relationship?

Yes

23. Find the COP



COP = 1.5

24. Mrs. Summerfield drove 186 miles in 3 hours at a constant speed. What is the constant of proportionality?

COP = 62 m/hr

25. A recipe calls for ⅔ cup sugar for every 1 egg makes 10 brownies. If you want to make 25 brownies, how many cups of sugar do you need?

$1\frac{2}{3}$ cups

$\frac{2}{3} \times 2.5$