~~Common Core Math 6+~~ Compacted 6 **Unit 8 Test Study Guide** **Name:** **Date:**

Complete the following problems.

1. Write the ratio $\frac{9}{7}$ in the two other forms.

   9:7 9 to 7

2. Write two other ratios equal to $\frac{8}{14}$. $\frac{4}{7}$ $\frac{16}{28}$

3. Write the ratio $\frac{56}{16}$ in simplest form. $\frac{7}{2}$

4. Johnny is finding the ratio of grasshoppers to bugs. Is this a part to part, part to whole, or whole to part relationship?

   part-to-whole

5. There are 4 green marbles, 7 orange marbles and 10 blue marbles. What is the ratio of green marbles to all marbles? Write your answer in simplest form.

   4:21

6. It took Anthony 5 hours and 45 minutes to complete a 25 mile walkathon. What was his average speed in miles per hour? Round your answer to the nearest hundredth.

   $\frac{5.75 \text{ hrs.}}{25 \text{ miles}}$ $\frac{25 \text{ miles}}{5.75 \text{ hrs.}} = \frac{4.35 \text{ miles}}{1 \text{ hr.}}$

7. 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.

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

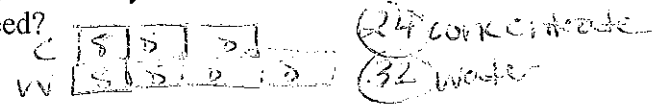
8. Find the unit rate. You drive 168 miles in 2 hours and 30 minutes.

   $\frac{168 \text{ miles}}{2.5 \text{ hr.}} = \frac{67.2 \text{ miles}}{1 \text{ hr.}}$

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

   $\frac{\$42}{5 \text{ CD}} = \frac{?}{7 \text{ CD}}$ \$58.80

10. 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?



For problems 11 -12, state whether the ratios form a proportion.

11. $\frac{2}{4} = \frac{6}{12}$ 24 24 yes

12. $\frac{3}{2} = \frac{18}{8}$ 24 36 no

Solve the proportion for the variable on questions 13-15.

13. $\frac{3}{x} = \frac{7}{10}$ 4.25714 $4\frac{2}{7}$

14. $\frac{x}{9} = \frac{7}{14}$ 4.5

15. $\frac{p}{8} = \frac{13}{2}$ 52

Solve the following proportion word problems and round your answer to the nearest whole number.

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

$\frac{2400 \text{ crayons}}{4 \text{ min.}} = \frac{?}{15 \text{ min}}$ (9000 crayons)

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

$\frac{120 \text{ words}}{100 \text{ sec.}} = \frac{258 \text{ words}}{?}$ (215 sec)

18. 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.

$\frac{100 \text{ n. miles}}{115 \text{ s. miles}} = \frac{?}{92 \text{ s. miles}}$ (80 n. miles)

If you plan on going 92 statute miles, how many nautical miles would you have to travel?

19. How many gallons are in a 3-liter bottle of Pepsi. 1 gallon = 3.785 liters.

$\frac{1 \text{ gal}}{3.785 \text{ L}} = \frac{?}{3 \text{ L}}$ (0.8 gal)

20. 2.5 teaspoons is the same as how many milliliters? 1 teaspoon = 4.9 milliliters.

$\frac{1 \text{ t}}{4.9 \text{ mL}} = \frac{2.5 \text{ t}}{?}$ (12.25 mL)

21. How many meters are there in 8 feet? 1 foot = 0.305 meters.

$\frac{1 \text{ ft}}{0.305 \text{ m}} = \frac{8 \text{ ft}}{?}$ (2.44 m)

You must also study all conversions within the same system!!