

Complete the following problems.

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

2. Write two other ratios equal to $\frac{8}{14}$.
 4 to 7
 16 to 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.
 $\frac{49}{210}$

6. It took Anthony 5 hours to complete a 25 mile walkathon. What was his average speed in miles per hour? Round your answer to the nearest hundredth.
 $\frac{5 \text{ mi}}{1.4 \text{ hr}}$

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.
 $\frac{\$21.50}{20 \text{ lbs}} = \frac{\$1.08}{1}$
 $\frac{\$32.90}{30 \text{ lbs}} = \frac{\$1.09}{1}$

8. Find the unit rate. You drive 168 miles in 2 hours and 30 minutes.
 $\frac{168 \text{ mi}}{2.5 \text{ hrs}} = \frac{67.2 \text{ mi}}{1 \text{ hr}}$

9. The cost of 5 CDs is \$42. At this rate, what is the cost of 7 CDs?
 $\frac{\$42}{5 \text{ cd}} = \frac{\$58.80}{7 \text{ cd}}$

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?
 $\frac{3 \text{ can conc}}{4 \text{ can water}} \Rightarrow \frac{7 \text{ cans} \times 3}{7 \text{ cans} \times 4} = \frac{21 \text{ can conc}}{28 \text{ water}}$

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

11. The Crayola crayon company can make 2400 crayons in 4 minutes. How many crayons can they make in 15 minutes?
 $\frac{2400}{4 \text{ min}} = \frac{600}{1 \text{ min}} \times 15 = 9000$

12. A typist can type 120 words in 100 seconds. At that rate, how many seconds would it take her to type 258 words?
 $\frac{120 \text{ w}}{100 \text{ s}} = \frac{258 \text{ w}}{x} \Rightarrow x = 215$

13. 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?

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

$$x = 80 \text{ n.m.}$$

For #14-17, find the unit rate for each:

14. 3 cans of cat food for \$0.85
 $\frac{\$0.28}{1 \text{ can}}$

15. 14 ounces of olive oil for \$3.59
 $\frac{\$0.26}{1 \text{ oz}}$

16. 8.5 pounds of ground beef for \$19.00
 $\frac{\$2.24}{1 \text{ pound}}$

17. 4 pair of socks for \$11.00
 $\frac{\$2.75}{1 \text{ pair}}$

For #18-20, find the better buy:

18. 3 cans of tomato sauce for \$1.49 or 5 cans of tomato sauce for \$2.39
 $\frac{\$1.49}{3 \text{ cans}} = \frac{\$0.50}{1}$ or $\frac{\$2.39}{5} = \frac{\$0.48}{1}$ **5 cans**

19. 24 ounces of juice for \$2.25 or 40 ounces of juice for \$3.79
 $\frac{\$2.25}{24 \text{ oz}} = \frac{\$0.093}{1}$ or $\frac{\$3.79}{40 \text{ oz}} = \frac{\$0.094}{1}$

20. A bag of 8 rolls for \$1.89 or a bag of 18 rolls for \$3.79
 $\frac{\$1.89}{8 \text{ r}} = \frac{\$0.24}{1}$ or $\frac{\$3.79}{18 \text{ r}} = \frac{\$0.21}{1}$
18 rolls