**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_**

**Review: Rates, Ratios, Proportional Reasoning and Slope**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. A parking lot contains 24 hybrid cars and 93 electric cars. Write all three forms of the ratio comparing hybrid cars to electric cars. | | 2. During a trip, a car traveled 465.3 miles in 6.25 hours. How many miles per hour did the car travel? | |
| 3. Two drinks are on sale at a store.  Drink A costs $1.36 for 15 ounces. Drink B costs $3.14 for 32 ounces. Determine the unit rates, and find which drink costs less per ounce. | | 4. Determine whether the following ratios are proportional:  and   1. no b. yes | |
| 5. Which equation represents the proportional relationship in the table?   |  |  | | --- | --- | | **x** | **y** | | 3 | -14.25 | | 5 | -23.75 | | 8 | -38 | | 12 | -57 |  1. y = x + (4.75) 2. y = x + (- 4.75) 3. y = 4.75x 4. y = -4.75x | | 6. The cost of notebooks at the school store is shown in the table below.   |  |  | | --- | --- | | Number of Notebooks | Cost | | 2 | $1.30 | | 3 | $1.95 | | 4 | $2.60 | | 5 | $3.25 |   What is the cost of one notebook? | |
| 7. A worker at a tire shop can install 4 new tires in 1.25 hours. At this rate how long would it take the worker to install new tires for 96 cars if each car will receive 4 tires? | | 8. What is the value of n?   |  |  | | --- | --- | |  |  | | |
| 9. Trail mix was made by combining 6 cups of almonds and 3 cups of M&M’s. Using the same ratio of almonds to M&M’s, how many cups of M&M’s would be needed for 24 cups of almonds? | 10. A group of students will be taking a field trip and there needs to be one chaperone for every 9 students. How many chaperones are needed for 135 students? | |
| 11. Harry ran 4 miles. He started at 9:20 and finished at 10:05. What was Harry’s average speed in miles per hour? | 12. Find the missing variable: | |
| 13. Fill in the following table and identify the constant of proportionality.   |  |  | | --- | --- | | **Minutes** | **Words Typed** | | 8 | 104 | | 5 |  | | 3 |  | | 1 |  |   Constant of Proportionality = \_\_\_\_\_\_\_\_\_ | 14. John paid $320 for 5 tickets at an amusement park. Each of the tickets cost the same price. Write an equation that represents the cost, *C* for *n* tickets? | |
| 15. North Carolina Public Schools spends about $101,600 for every 9 students. If Wake County Schools spends money proportionally to this amount, how much will they spend for 10,200 students?  17. How much flour per teaspoon of oil, if there is for | 16. Oliver reads 26 ½ pages of a book in hours. Express his reading speed in pages per hour.  18. What is the constant of proportionality? What does it represent?    **A.** The constant of proportionality is 1/2. This means 1 seed packet will give you 2 flowers.  **B.** The constant of proportionality is 1/2. This means 1 flower will come from 2 seed packets.  **C.** The constant of proportionality is 2. This means 1 seed packet will give you 2 flowers.  **D.** The constant of proportionality is 5. This means 1 flower will come from 2 seed packets. | |
| 19. Find the slope and y-intercept.  m = \_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ | 20. Graph the line that is formed by the equation y = -3x + 8.  [image] | |
| 21. Write the equation of the line. | 22. Graph x – 4  [image] | |
| 23. Determine the slope of the line that passes through the points  (-1,1) and (4,3). Show your work. | 24. Determine the slope of the line that passes through the points  (-15,3) and (-19,-13). Show your work. | |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 25. Four students wrote expressions using the variable *t*  below. If *t* represents a positive integer, whose  expression has the smallest value?   |  |  | | --- | --- | | **Student** | **Expression** | | **Amy** | -6(11*b* + 10) | | **Bob** | 3(6*b* – 9) | | **Chris** | -7(-3*b* + 19) | | **David** | -5(-4*b* – 3) | | |  | 26. Simplify:  1.3(-5.7 - 1.6*x*) + 1.9(2.7 + *x*) |
| 27. The rectangle has a perimeter of 130 units.    Write and solve an equation to find the width of the rectangle. |  | 28. What is the distance between -3 and on the number line? |
| 29. A band will sell CDs of their music at their concert for $7.25 each. The band ordered 1200 CDs at a cost of $3.50 each. Write and solve an inequality that represents the number of CDs, *n*, the band needs to sell to make a profit of at least $2000. |  |  |