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

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

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| --- | --- |
| 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 $3.14 for 32 ounces. Determine the unit rates, and find which drink costs less per ounce. | 4. Determine whether the following ratios are proportional:$\frac{14}{19}$ and $\frac{164}{222}$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?

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 $\frac{15}{n}=\frac{37}{71}$ |
| 9. Trail mix was made by combining 6 cups of almonds and 3 $\frac{1}{2}$ 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:$$\frac{n+3}{20}= \frac{19}{40}$$ |
| 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 $\frac{4}{7} cup of flour$ for $\frac{1}{2} teaspoon of oil?$ | 16. Oliver reads 26 ½ pages of a book in $1\frac{1}{8} $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 $ y=\frac{1}{3}$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. |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 $\frac{2}{3}$ and $\frac{5}{8}$ 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. |  |  |