**Math 6 - Unit 4 Study Guide** Name:

 Class Period: 1 2 3 4 Date:

**PART I: Direct Variation**

1. Circle each graph that shows a direct variation:
2. B. C. D. E. F.



1. Write a direct variation equation that matches the data in the table. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | 0 | 2 | 3 | 8 |
| y | 0 | 18 | 27 | 72 |

1. Circle the table that satisfies the direct variation equation, 

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* | 0 | 1 | 3 | 5 | 10 |
| *y* | 1.5 | 2.5 | 3.5 | 5.5 | 11.5 |

 | b) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* | 0 | 2 | 3 | 4 | 10 |
| *y* | 0 | 3 | 4 | 6.5 | 18 |

 |

 Why did you make that choice?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Write a direct variation equation to represent the data in the graph below. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Claire sold 15 boxes of cookies (x) and made a total of $60 (y), as shown in the data table.



1. Write a direct variation equation that represents this situation, where k = the cost per box of cookies.
2. What does the dependent variable represent?
3. What does the independent variable represent?

**PART II: Inequalities**

1. Using the inequality **16 < a**, name 3 possible solutions for x:\_\_\_\_\_\_\_\_\_\_\_ and 3 non-solutions:\_\_\_\_\_\_\_\_
2. Honor Roll students must have grades over 79. Inequality: \_\_\_\_\_\_\_\_\_\_\_\_
3. At least 180 6th graders made Honor Roll. Inequality: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Write the inequality AND a word problem to match this graph:

Inequality:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Word Problem:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PART III: Equations**

1. When solving an equation, you must first perform the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operation on \_\_\_\_\_\_\_\_\_\_\_\_ sides of

the equation. Once you have a solution, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it back into the equation to check your answer.

1. Write 2 different equations that have a solution of 48. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Write an equation for each word problem on #s 12-15, and solve.* ***SHOW ALL STEPS!***

|  |  |
| --- | --- |
| 1. Your math teacher graded x papers last quarter. She split those evenly over 9 weeks, and graded 500 each week. Write an equation and solve for x, the total number of papers graded.
 | 1. Michael’s phone could hold x gigabytes of data. He has already used 11.75, and has 4.25 left. Write an equation and solve for x, the total gigabytes on his phone.
 |
| 1. The drama club has 16 weeks to rehearse for their play. They need to practice a total of 80 hours. Write an equation and solve for x, the number of hours they need to practice each week.
 | 1. McKenzie had x dollars. She got $25 more over the holidays, and she earned $14.90 doing chores. Her total is now $54.83. Write an equation and solve for x, the amount she started with.
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