**Math 6 - Unit 4: Equations & Inequalities** Name:

*Direct Variation and Equation Review*

 Class Period: 1 2 3 4 Date:

***Write an equation to model each problem then solve for the variable and then check to see if your solution is correct. You MUST show all your work.***

1) Jordyn saved $88. His sister saved $105. Write and solve an equation to find how much more Jordyn’s sister saved.

2) Four friends went out to dinner. When they split the bill, they each had to pay $7.87. What was the total bill for the dinner?

***Solve the following equations and check your work. You MUST show all your work.***

3) *u* – 37 = 208 4) *m* + $\frac{1}{7}$ = $\frac{5}{7}$

5) 7*h* = 133 6) $\frac{x}{14}=8$

7) A direct variation graph always begins at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is always a \_\_\_\_\_\_\_\_\_\_\_\_\_.

8) Write an equation to model the relationship in the table. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | 0 | 2 | 7 | 11 |
| y | 0 | 10 | 35 | 55 |

9) To solve an equation I use an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operation on \_\_\_\_\_\_\_\_\_\_\_ sides of the equation. Then I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that answer back into the equation to \_\_\_\_\_\_\_\_\_\_\_\_\_ my answer.

10) Complete the table of values to satisfy the direct variation equation *y* = 15*x.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x | 0 | 3 | 5 | 8 |
| y |  |  |  |  |

11) Use the direct variation equation to complete the table and then graph the ordered pairs.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *y* = 2.5*x* | **x** | 0 | 1 | 2 | 3 |
| **y** |  |  |  |  |

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12) Nassir is saving up for a new bike. He earns $6 for each chore he does. The bike costs a total of $102.

What is the constant of variation, ***k***?

x, the input/ind. variable represents:

y, the output/dep. variable represents:

What direct variation equation represents this situation?

How many chores does Nassir have to do to earn enough money to buy the bike?

Complete the chart below using your equation.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 0 | 2 | 5 | 10 | 15 |
| y |  |  |  |  |  |

*For numbers 13 – 16, use the given rules to find the missing* ***x*** *and* ***y*** *values.*

13) ***y* =** $\frac{1}{3}$***x*** 14) ***y* = 12*x***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **x** |  | 3 | 6 |  | 14 |
| **y** | 0 |  |  | 3 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **x** | 0 | 1 |  | 6 |  | 12 |
| **y** |  |  | 48 |  | 120 |  |

15) ***y* = 1.2*x*** 16) ***y* = 25*x***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **x** |  | 1 | 2 |  | 5 |
| **y** | 0 |  |  | 3.6 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **x** | 0 | 1 |  | 5 |  | 13 |
| **y** |  |  | 50 |  | 250 |  |