

Math 6 - Unit 4: Equations & Inequalities

Direct Variation and Equation Review

Name: KEY

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.

$$88 + x = 105$$

$$-88 \quad -88$$

$$x = 17$$

Jordyn's sister saved \$17 more.

- 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?

$$\frac{31.48}{4} = 7.87 \quad 4 \cdot \frac{x}{4} = 7.87 \cdot 4 \quad x = 31.48$$

$$7.87 = 7.87 \checkmark$$

The total bill was \$31.48

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

3) $u - 37 = 208$

$$+37 \quad +37$$

$$u = 245$$

$$245 - 37 = 208$$

$$208 = 208 \checkmark$$

4) $m + \frac{1}{7} = \frac{5}{7}$

$$-\frac{1}{7} \quad -\frac{1}{7}$$

$$m = \frac{4}{7}$$

$$\frac{4}{7} + \frac{1}{7} = \frac{5}{7}$$

$$\frac{5}{7} = \frac{5}{7} \checkmark$$

5) $\frac{7h}{7} = \frac{133}{7}$

$$h = 19$$

$$7(19) = 133$$

$$133 = 133 \checkmark$$

6) $\frac{x}{14} = 8 \cdot 14$

$$x = 112$$

$$\frac{112}{14} = 8$$

$$8 = 8 \checkmark$$

- 7) A direct variation graph always begins at the origin (0,0) and is always a straight line.

- 8) Write an equation to model the relationship in the table. $y = 5x$

x	0	2	7	11
y	0	10	35	55

- 9) To solve an equation I use an inverse operation on both sides of the equation.

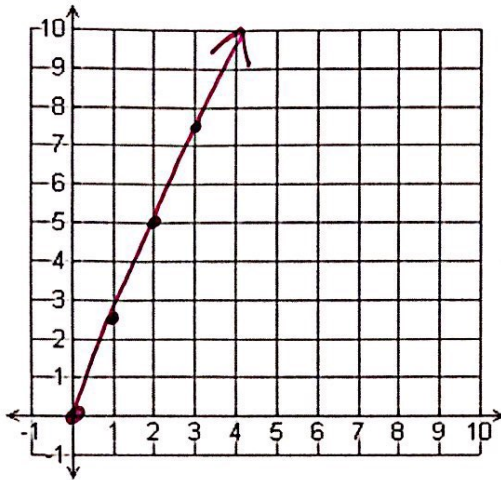
Then I substitute that answer back into the equation to check my answer.

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

x	0	3	5	8
y	0	45	75	120

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

$y = 2.5x$	x	0	1	2	3
	y	0	2.5	5	7.5



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 ? 6

x , the input/ind. variable represents: # of chores done

y , the output/dep. variable represents: total money earned

What direct variation equation represents this situation? $y = 6x$

How many chores does Nassir have to do to earn enough money to buy the bike? 17

Complete the chart below using your equation.

x	0	2	5	10	15
y	0	12	30	60	90

$$\frac{102 = 6x}{6} = \frac{6x}{6}$$

$$17 = x$$

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

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

x	0	3	6	9	14
y	0	1	2	3	$\frac{14}{3}$

14) $y = 12x$

x	0	1	4	6	10	12
y	0	12	48	72	120	144

15) $y = 1.2x$

x	0	1	2	3	5
y	0	1.2	2.4	3.6	6

16) $y = 25x$

x	0	1	2	5	10	13
y	0	25	50	125	250	325