

5.1-5.4 Review Worksheet

Name: Key

Find the rate of change and explain what it means.

1. Distance a car travels

Time (s)	Distance (m)
3	75
6	150
9	225
12	300

3x
3x
3x

75
75
75

change y / change x

$$\frac{75}{3} = \frac{25}{1} \text{ so } 25 \text{ m per s.}$$

Find the slope of the line that passes through each pair of points.

2. (-2, 1) & (3, 6)

3. (2, 5) & (-8, 5)

4. (6, 4) & (2, 7)

$$\frac{6-1}{3-(-2)} = \frac{5}{5} = \boxed{1}$$

$$\frac{5-5}{-8-2} = \frac{0}{-10} = \boxed{0}$$

$$\frac{7-4}{2-6} = \boxed{\frac{3}{-4}}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ or } m = \frac{y_1 - y_2}{x_1 - x_2}$$

Tell whether each equation is a direct variation. If it is, find the constant of variation.

5. $y = \frac{1}{2}x$

6. $5x + 3 = 8y + 3$

7. $2y + 4 = 4x + 1$

Yes!
 $k = \frac{1}{2}$

$$\frac{5x}{8} = \frac{8y}{8}$$

$$y = \frac{5}{8}x$$

Yes! $k = \frac{5}{8}$

$$y = kx$$

$$\frac{2y}{2} = \frac{4x - 3}{2}$$

$$y = 2x - \frac{3}{2}$$

No!

Find the slope and y-intercept of the graph of each equation.

8. $y = \frac{1}{5}x + 3$

9. $4x + 5y = 20$

10. $2y = -8x - 10$

$$m = \frac{1}{5}$$

$$b = 3$$

$$\frac{5y}{5} = \frac{-4x + 20}{5}$$

$$y = -\frac{4}{5}x + 4$$

$$m = -\frac{4}{5} \quad b = 4$$

$$y = -4x - 5$$

$$m = -4/1$$

$$b = -5$$

11. The distance a wheel moves forward varies directly with the number of rotations. Suppose the wheel moves 56 feet in 8 rotations. Write a direct variation equation to represent this situation. What distance does the wheel move in 20 rotations?

$$k = \frac{y}{x} \quad k = \frac{56}{8} \quad k = 7$$

$$y = 7x$$

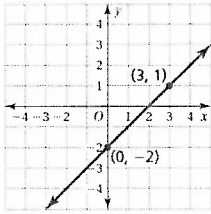
$$y = 7(20)$$

$$y = 140 \text{ ft}$$

Write an equation in slope-intercept form for the line.

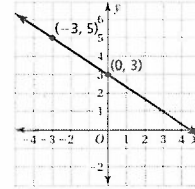
12.

$m = \frac{3-1}{1-0} = 2$
 $b = -2$



$y = 2x - 2$

13.



$m = -\frac{2}{3}$
 $b = 3$

$y = -\frac{2}{3}x + 3$

Write an equation in point-slope form for the line through the given point with the given slope.

14. (4, 0) $m = 4$

$y - 0 = 4(x - 4)$

15. (3, -2) $m = -\frac{1}{2}$

$y + 2 = -\frac{1}{2}(x - 3)$

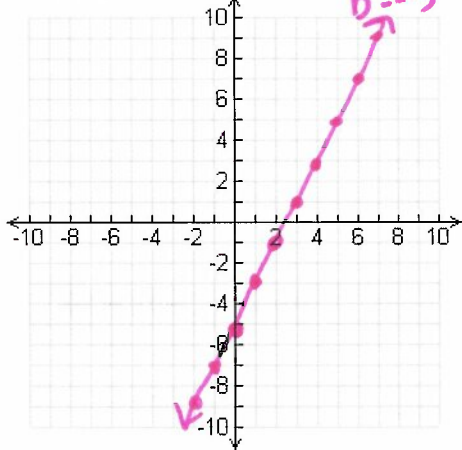
Write an equation, in slope-intercept form, of the line that passes through the pair of points.

16. (-1, -5) & (2, 10)

$m = \frac{10 - (-5)}{2 - (-1)} = \frac{15}{3} = 5$
 $y - 10 = 5(x - 2)$
 $y - 10 = 5x - 10$
 $y = 5x$

Graph each equation.

18. $y = 2x - 5$

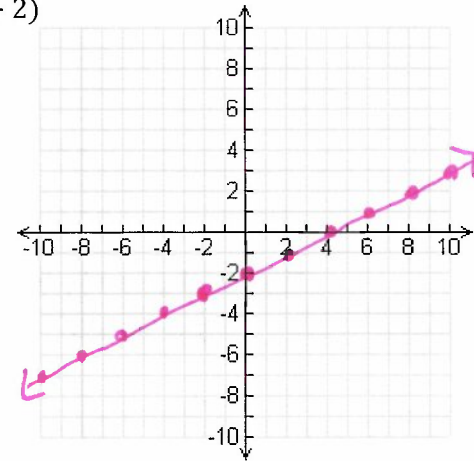


17. (-2, 4) & (3, -1)

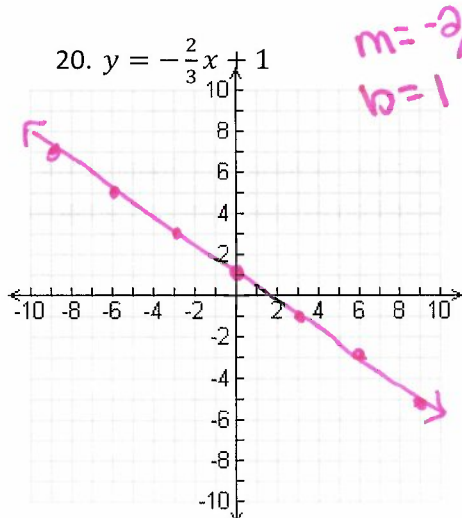
$m = \frac{-1 - 4}{3 - (-2)} = \frac{-5}{5} = -1$
 $y - 4 = -1(x + 2)$
 $y - 4 = -x - 2$
 $y = -x + 2$

19. $y + 3 = \frac{1}{2}(x + 2)$

$(-2, -3)$
 $m = 1/2$



20. $y = -\frac{2}{3}x + 1$



21. $y - 4 = -2(x - 2)$

$(2, 4)$
 $m = -2/1$

