

Unit 2 Review

KEY

1. Identify each of the equations as being in slope-intercept form, point slope form or standard form.

$y = 2x - 1$	$y + 2 = -(x + 4)$	$4x - 2y = 8$
Slope-intercept	point-slope	standard

2. The rate of change is constant in the table. Find the rate of change. Explain what the rate of change means.

People	Cost
8	16.00
9	18.00
10	20.00

Rate of Change $2/1 = 2$

What does the rate of change mean for this situation?

Each person costs \$2.

3. What is the slope of a horizontal line?

Horizontal $m = 0$

What is the slope of a vertical line?

Vertical $m = \text{undefined}$

4. Use the slope formula to find the missing coordinate

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

$(-5, 8)$ and $(-3, y)$

$m = 5$

$$5 = \frac{y - 8}{-3 - -5}$$

$$5 = \frac{y - 8}{2} \quad y - 8 = 10 \quad y = 18$$

Missing coordinate: $y = 18$

5. Write an equation of the line with the given slope and y-intercept.

$m = -3$

$b = 5$

$$y = mx + b$$

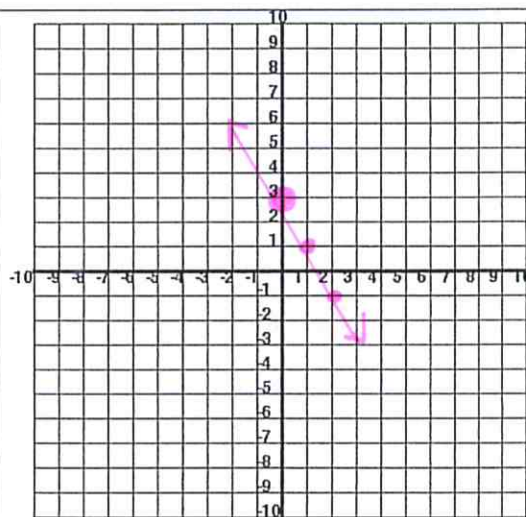
$$y = -3x + 5$$

Equation: $y = -3x + 5$

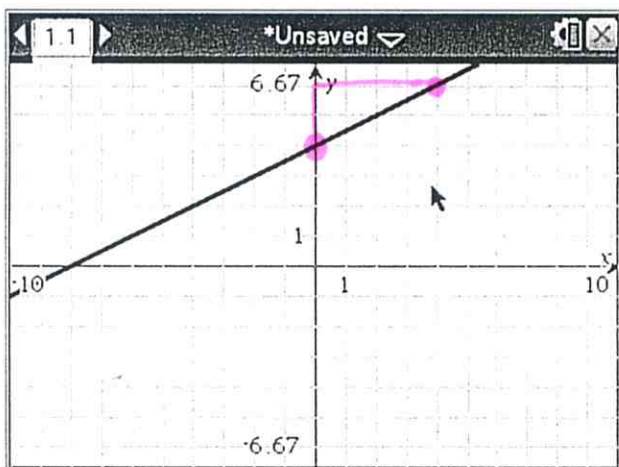
6. Graph $y = -2x + 3$

$$m = -2$$

$$b = 3$$



7. Write the equation of the line



$$m = \frac{2}{4} = \frac{1}{2} \quad b = 4$$

Equation: $y = \frac{1}{2}x + 4$

8.

X	Y
-6	10
-4	13
-2	16
0	19
2	21

2 < 3
2 < 3
2 < 3
2 < 2

Linear? Yes **No**

$m =$ _____

y-intercept = _____

equation $y = mx + b$: _____

9. Determine if each ordered pair is a solution to the function. $f(x) = -5x + 1$

Ordered Pair	Work or Explanation	Solution?
(0, 1)	$f(0) = -5(0) + 1 = 1$	Yes
(2, -9)	$f(2) = -5(2) + 1 = -9$	Yes
(-2, 11)	$f(-2) = -5(-2) + 1 = 11$	Yes
(-2, -3)	$f(-2) = -5(-2) + 1 = 11$	No

10. A line passes through the given points. Write an equation in point slope form.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - (-2)}{7 - (-3)} = \frac{3}{10}$$

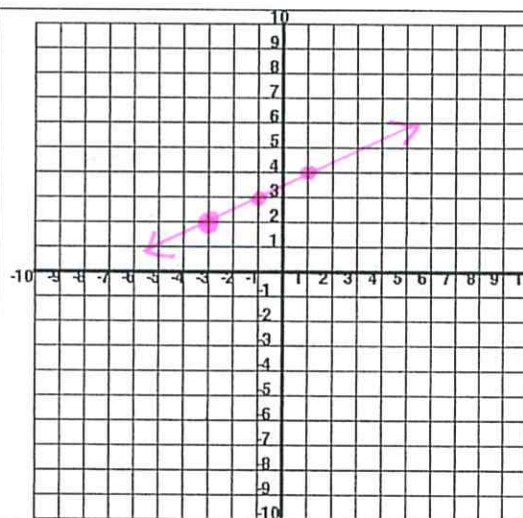
$$\begin{aligned} y - (-2) &= \frac{3}{10}(x - (-3)) \\ y + 2 &= \frac{3}{10}(x + 3) \end{aligned}$$

(-3, -2), (7, 1)

Equation: $y + 2 = \frac{3}{10}(x + 3)$

11. Graph the equation $y - 2 = \frac{1}{2}(x + 3)$

$$\begin{aligned} m &= \frac{1}{2} \\ \text{point} &= (-3, 2) \end{aligned}$$



12. Identify the slope and a point from the given equation.

$$y + 6 = 2(x - 2)$$

$$\begin{aligned} m &= 2 \\ \text{point} &= (2, -6) \end{aligned}$$

M = 2

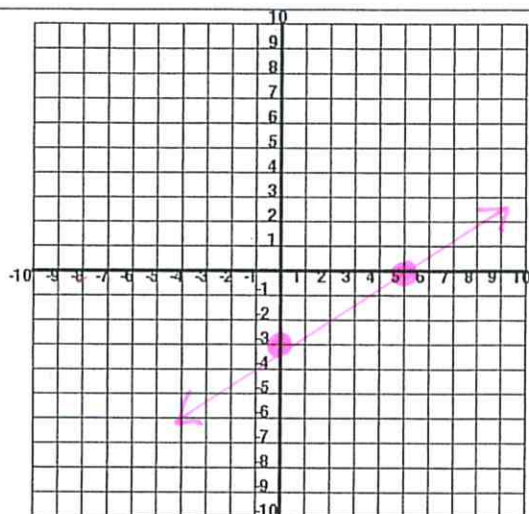
Point: (2, -6)

13. Graph $3x - 5y = 15$

$$\begin{array}{c|c} x & y \\ \hline 0 & -3 \\ 5 & 0 \end{array}$$

$$\begin{aligned} 3(0) - 5y &= 15 \\ -5y &= 15 \\ \underline{-5} & \quad \underline{-5} \\ y &= -3 \end{aligned}$$

$$\begin{aligned} 3x - 5(0) &= 15 \\ 3x &= 15 \\ \underline{3} & \quad \underline{3} \\ x &= 5 \end{aligned}$$



14.

The ninth grade class holds a car wash to raise money to send Mrs. Talley to try out for The Voice. A wash costs \$5 per car and \$6 per truck. Write an equation in standard form to relate the number of cars and trucks the students must wash to raise \$3,000.00. If 300 cars are washed how many trucks need to be washed in order to raise the ~~\$1000.00~~ ^{\$3,000}.

Let $x = \# \text{ cars}$ let $y = \# \text{ trucks}$

$$5x + 6y = 3,000$$

$$5(300) + 6y = 3,000$$

$$\begin{array}{r} 1,500 + 6y = 3,000 \\ \underline{-1,500} \quad \underline{-1,500} \end{array}$$

$$\frac{6y = 1,500}{6} \quad \frac{6}{6}$$

$$y = 250$$

Equation: $5x + 6y = 3,000$

Solution: 250 trucks must be washed.