

Name: _____

Algebra 2
Unit 2 REVIEW:
Writing and Graphing Linear Functions in Two Variables
Non-Calculator Portion

Target 2.1: I can graph a linear equation using a table of two values.

Target 2.2: I can graph a linear equation using x- and y-intercepts.

Target 2.3: I can graph a linear equation using slope and y-intercept.

Target 2.8: I can write linear equations when given the graph of the equation.

Target 2.1: I can graph linear equations using a table.

1. What line will contain all the points in this table?

X	Y
-1	-4
2	5
4	11

$$\frac{5 - (-4)}{2 - (-1)} = \frac{9}{3} = 3 = m \quad (-1, 4)$$

$$y + 4 = 3(x + 1)$$

$$y + 4 = 3x + 3$$

$$y = 3x - 1$$

2. Which set of ordered pairs (x, y) satisfies the equation $3x - 2y = 7$?

A. $\{(1.4, 1), (1, 0), (0.6, -1)\}$

B. $\{(0, -3.5), (1, -2), (-1, -5)\}$

C. $\{(3, 2), (-1, 0), (-1.4, -1)\}$

D. $\{(1, -0.6), (0, -1), (-1, -1.4)\}$

3. The cost of a ticket for an event is \$17. Make a table that shows the amount, y , Justin will spend to buy x tickets?

X	Y
1	17
2	34
3	51

Target 2.2: I can graph linear equations using x- and y-intercepts.

4. Find the y-intercept for $4x + 6y = -36$.

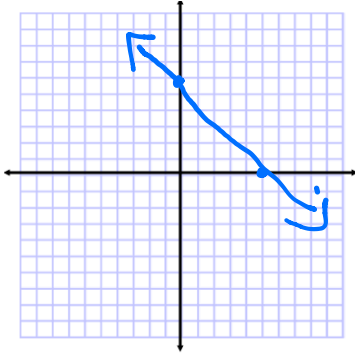
option 1: yint $x=0$
 $4(0) + 6y = -36$
 $\frac{6y}{6} = \frac{-36}{6}$
 $y = -6$

option 2: $4x + 6y = -36$
 $\frac{-4x}{-4x} \quad \frac{-6y}{-6y}$
 $\frac{6y}{6} = \frac{-4x - 36}{6}$
 $y = -\frac{4}{6}x - 6$ yint: -6

5. Find the x-intercept for $y = -\frac{1}{2}x + 8$.

xint: $y=0$
 $0 = -\frac{1}{2}x + 8$
 $\frac{-8}{-2} = \frac{(-\frac{1}{2}x) - 2}{-2}$
 $16 = x$

6. Isabella drew a line with an x-intercept of 5 and a y-intercept of 7. What did her line look like?

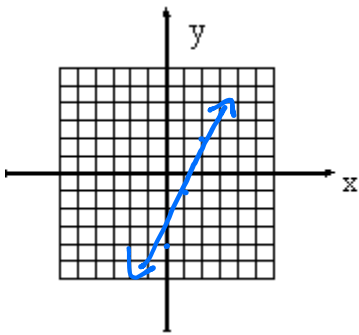


Target 2.3: I can graph linear equations using slope and y-intercept.

Graph each of the following equations on the coordinate axis. State the slope, y-intercept or x-intercept as indicated for each.

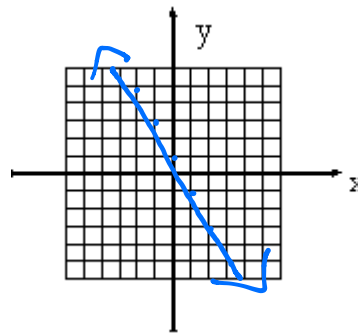
7. $y = 3x - 4$

Slope: 3 Y-intercept: -4



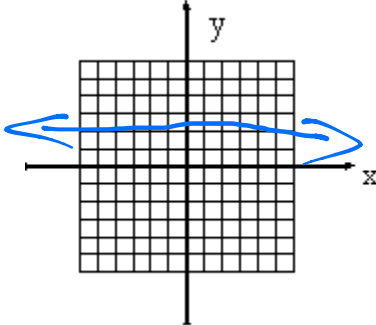
8. $y = -2x + 1$

Slope: -2 Y-intercept: 1



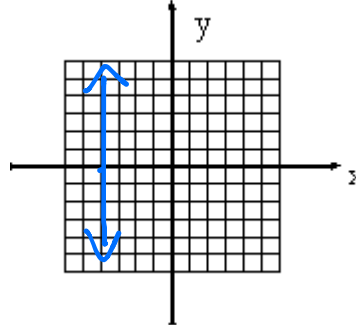
9. $y = 2$

Slope: 0 Y-intercept: 2



10. $x = -4$

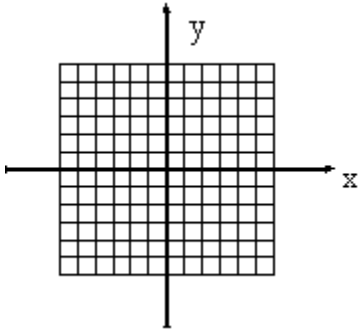
Slope: undefined Y-intercept: N/A



$$\begin{aligned} 3x + 6y &= 12 \\ -3x & \quad -3x \\ \hline 6y &= -3x + 12 \\ \frac{6y}{6} &= \frac{-3x + 12}{6} \\ y &= -\frac{1}{2}x + 2 \end{aligned}$$

11. $3x + 6y = 12$

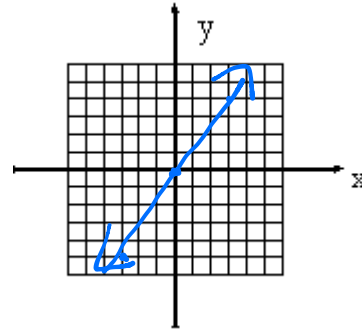
Slope: $-\frac{1}{2}$ Y-intercept: 2



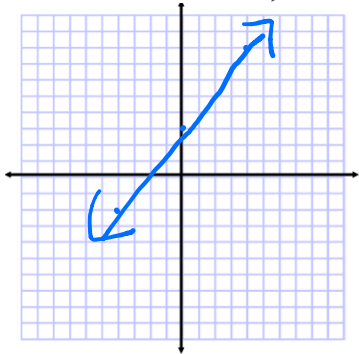
$$\begin{aligned} 5x - 3y &= 0 \\ -5x & \quad -5x \\ \hline -3y &= -5x \\ \frac{-3y}{-3} &= \frac{-5x}{-3} \\ y &= \frac{5}{3}x \end{aligned}$$

12. $5x - 3y = 0$

Slope: $\frac{5}{3}$ Y-intercept: 0

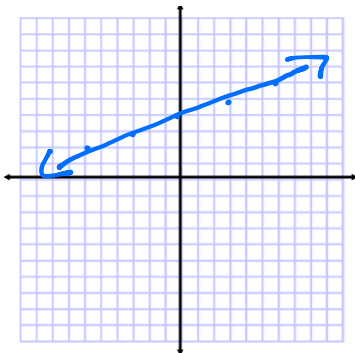


13. The cost of a single-scoop ice cream cone is \$3.00. Each extra scoop of ice cream costs an additional \$1.25. If x is the number of extra scoops of ice cream and y is the total cost of an ice cream cone, draw a graph that represents this situation?



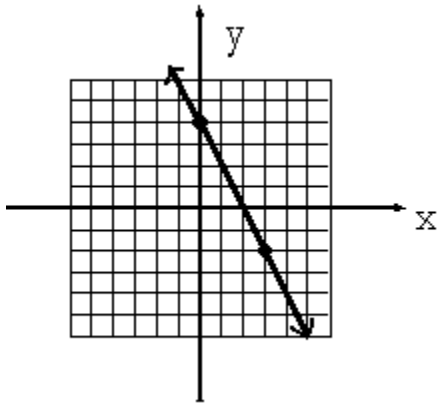
$$y = 1.25x + 3 \text{ or } y = \frac{5}{4}x + 3$$

14. The equation $y = \frac{1}{3}x + 4$ represents the total monthly cost, y , of a cell phone plan when x minutes are used. Draw a graph that represents this equation?



Target 2.8: I can write linear equations when given the graph of the equation.

15. Find the equation for the line graphed in a) standard form and b) slope-intercept form.



a) standard form

$$y = -2x + 4$$

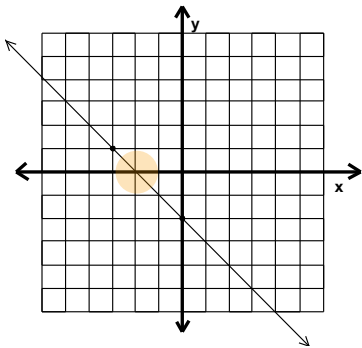
$$\begin{array}{r} +2x \quad +2x \\ \hline 2x + y = 4 \end{array}$$

b) slope-intercept form

$$m = -2 \quad b = 4$$

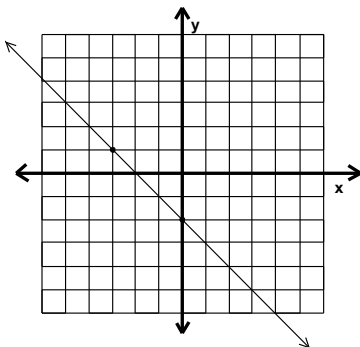
$$y = -2x + 4$$

16. Which of the following is **correct** for the given graph?



- A. the x-intercept is at 4
- B. the slope is negative
- C. the point (-3, 2) is on the line
- D. the line does not fall in Quadrant I

17. Which of the following is **incorrect** for the graph below?



- A. the y-intercept is at -2
- B. the slope is positive
- C. the point (-3, 1) is on the line
- D. the line falls in Quadrant I

