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$$\frac{4}{6}x + \frac{1}{6}x$$

$$\frac{5}{6}x + 8 = -17$$

$$\frac{6}{5} \cdot \frac{5}{6}x = \frac{-25}{1} \cdot \frac{6}{5}$$

$$x = -30$$

Chapter 9-5 Notes - Slope-Intercept Form

$$y = mx + b$$

$m = \text{slope}$

$b = \text{y-intercept, where the line crosses the y-axis}$

Slope-intercept form requires the "y" to be isolated.

To graph using slope and intercept

- 1) Plot the y-intercept as the first point.
- 2) Use the slope to move up (positive) or down (negative) and to the right from the y-intercept to plot the second point.
- 3) Connect both points with a line and add the arrows to the end.

Identify the slope and intercept for each equation.

1) $y = -2x + 6$
slope (m) = $\frac{-2}{1}$ or -2

y-intercept (b) = $(0, 6)$ or 6

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

y-intercept (b) = $(0, -4)$ or -4

3) $-2x - y = 5$
 ~~$+y + y$~~

~~$-2x = y + 5$~~
 ~~$-5 -5$~~

$-2x - 5 = y$

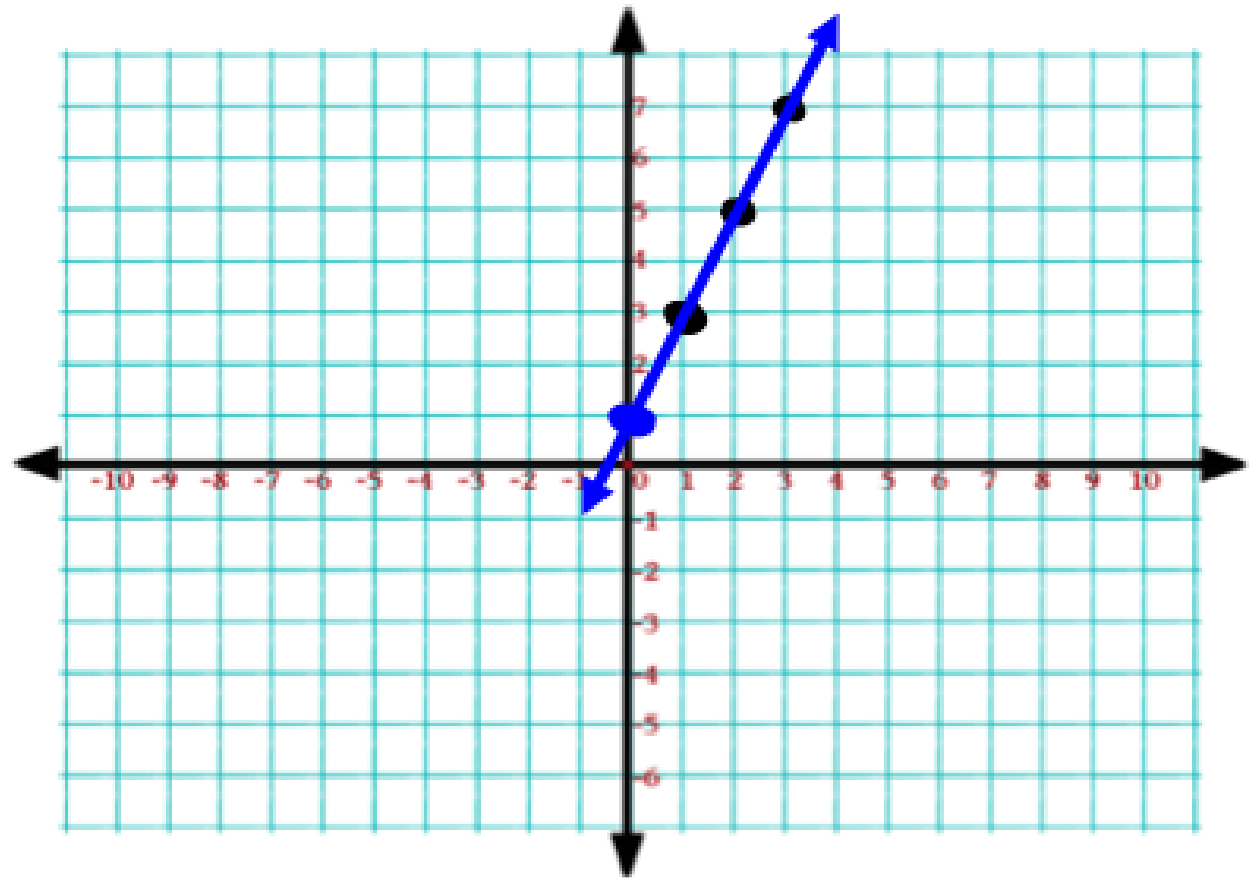
slope (m) = $\frac{-2}{1}$ or -2

y-intercept (b) = $(0, -5)$ or -5

Graph using the slope and y-intercept

4) $y = 2x + 1$

$$m = \frac{2}{1}$$



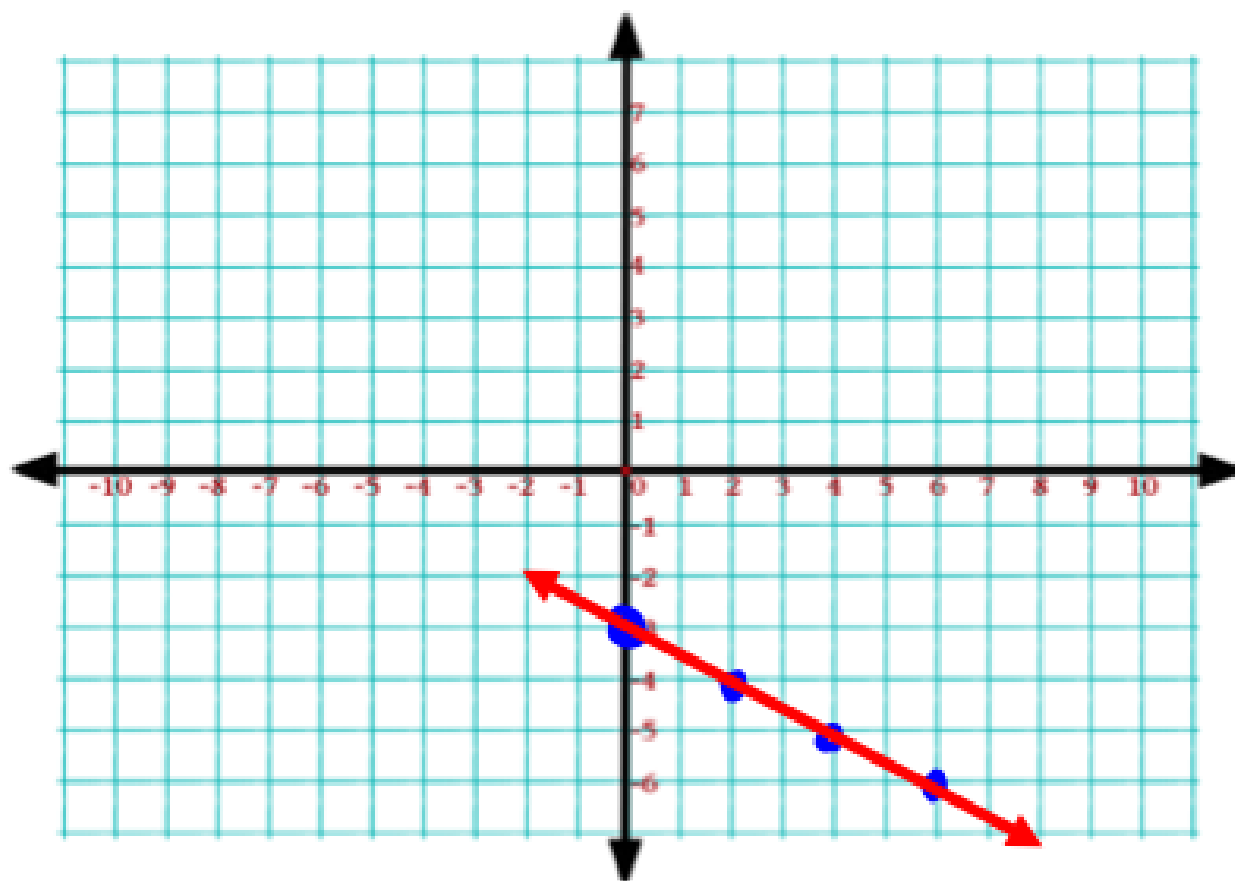
Graph using the slope and y-intercept

$$5) 4y + 2x = -12$$

$$-2x \quad -2x$$

$$\frac{4y}{4} = \frac{-2x}{4} + \frac{-12}{4}$$

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



Graph using the slope and y-intercept

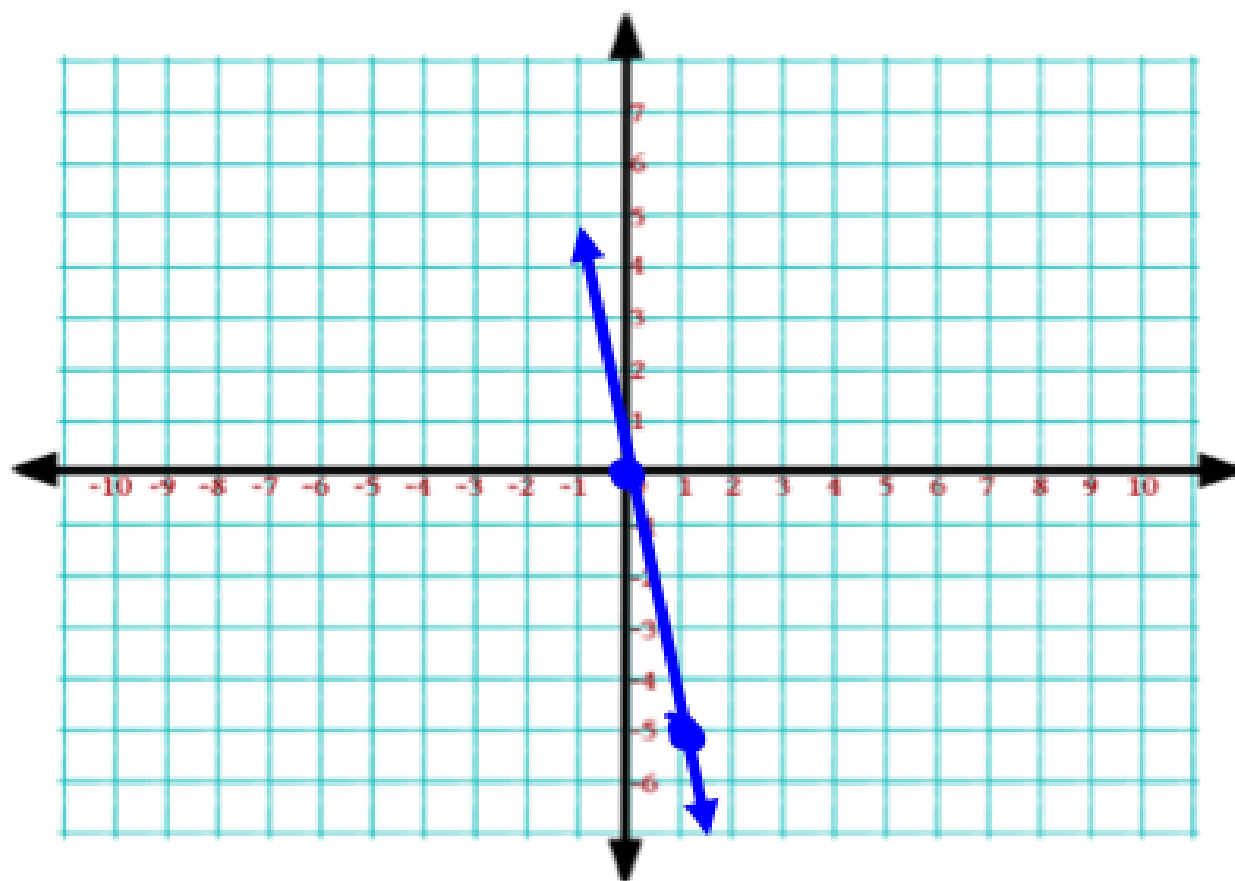
6) $y = -5x$

$$y = mx + b$$

$$y = mx + 0$$

$$y = -5x$$

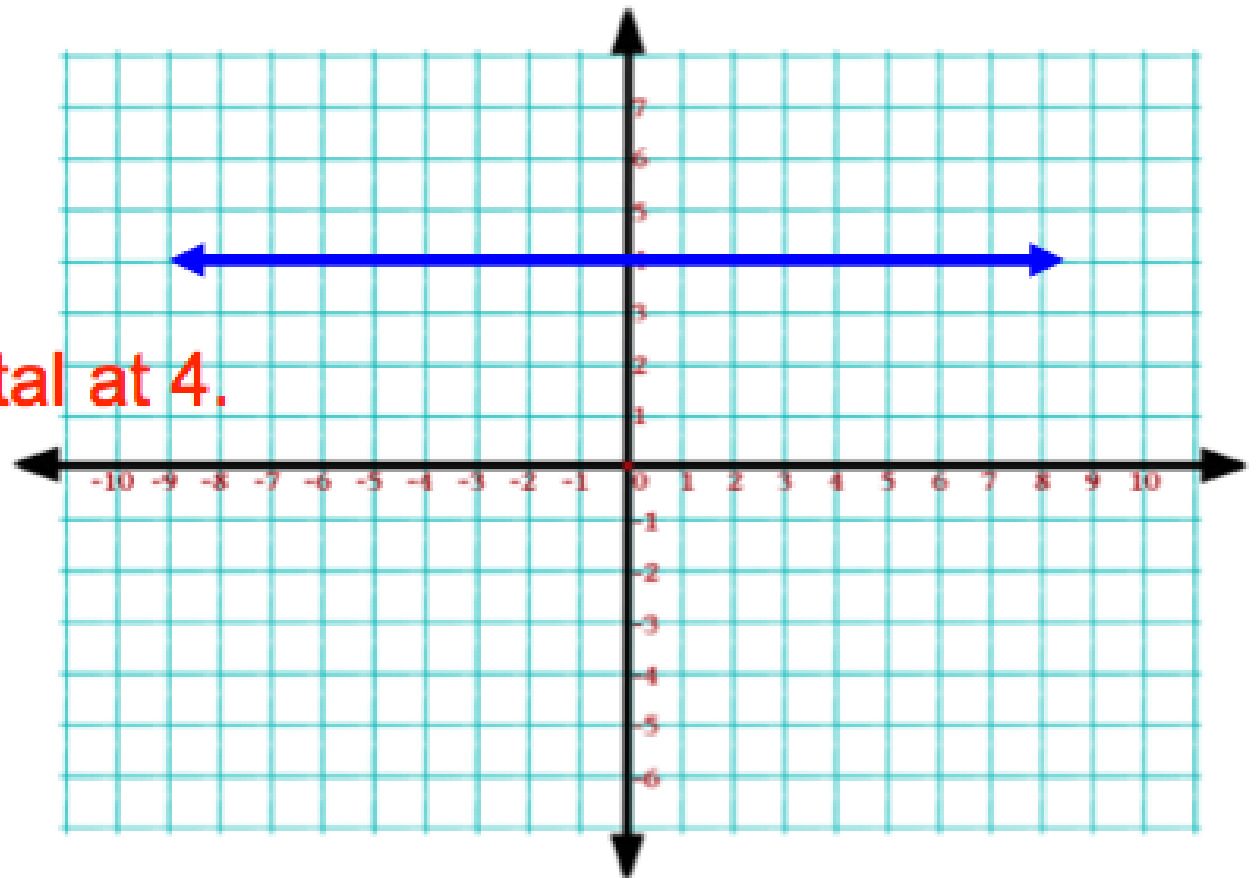
$$m = \frac{-5}{1}$$



Graph using the slope and y-intercept

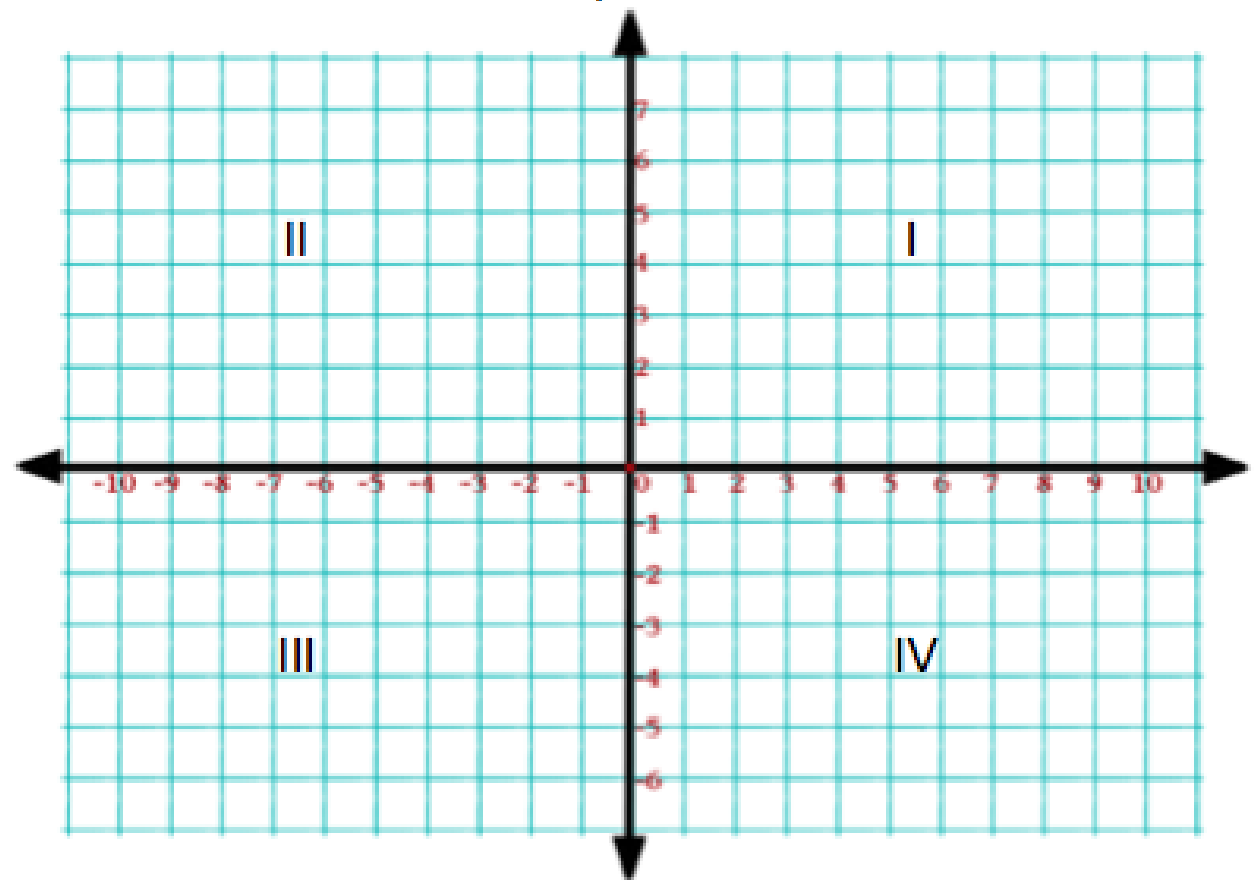
7) $y = 4$

The slope is zero,
so the line is horizontal at 4.



8) If an equation for a line has a positive y-intercept and slope, which quadrants does the line pass through?

Review of how the quadrants are numbered.



The line will pass through quadrants I, II, and III.