

Section 3.4: THE SLOPE-INTERCEPT FORM OF THE EQUATION OF A LINE

When you are done with your homework you should be able to...

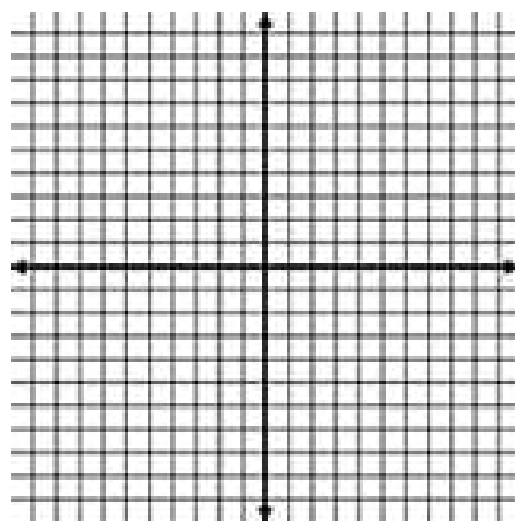
- π Find a line's slope and y -intercept from its equation
- π Graph lines in slope-intercept form
- π Use slope and y -intercept to graph $Ax + By = C$
- π Use slope and y -intercept to model data

WARM-UP:

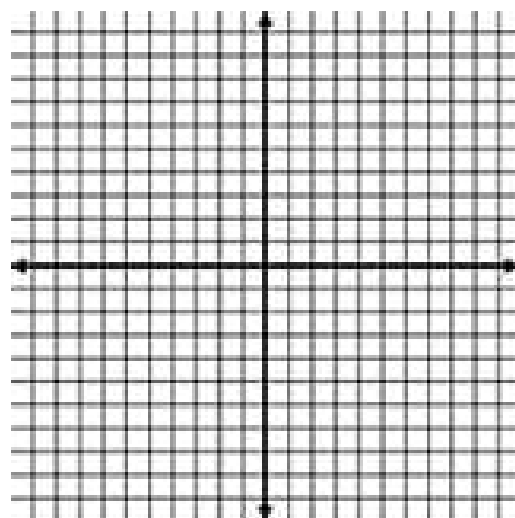
Graph each equation.

a. $4x - 8y - 2 = 0$

x	$4x - 8y - 2 = 0$	(x, y)



b. The line which passes through the points $(-1, 2)$ and $(3, 0)$.



SLOPE-INTERCEPT FORM OF THE EQUATION OF A LINE

The _____ - _____ form of the _____
of a nonvertical line with slope _____ and _____ is

Example 1: Find the slope and the y -intercept of the line with the given equation:

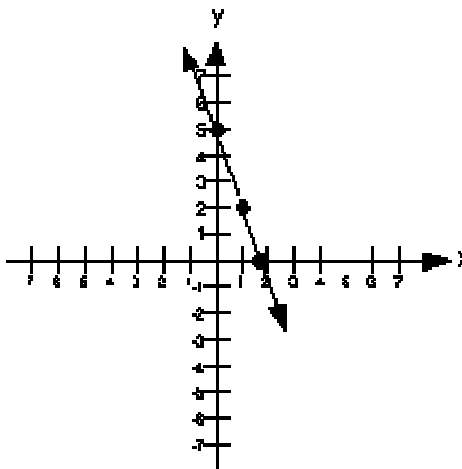
a. $y = -4x - 1$

b. $6x - y = -1$

c. $y = \frac{5}{7}x + 2$

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

Example 2: Use the graph to find the equation of the line in slope-intercept form.



GRAPHING BY USING $y = mx + b$ SLOPE AND Y-INTERCEPT

1. Plot the point containing the _____ on the _____ axis.

This is the point _____.

2. Obtain a second _____ using the _____, _____. Write

_____ as a _____, and use _____ over _____,

starting at the _____.

3. Use a _____ to draw a _____ through the two

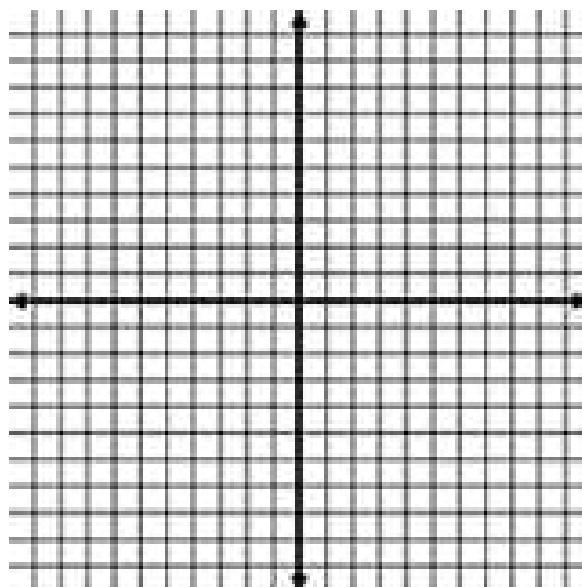
_____. Draw _____ at the _____

of the line to show that the line continues _____ in both

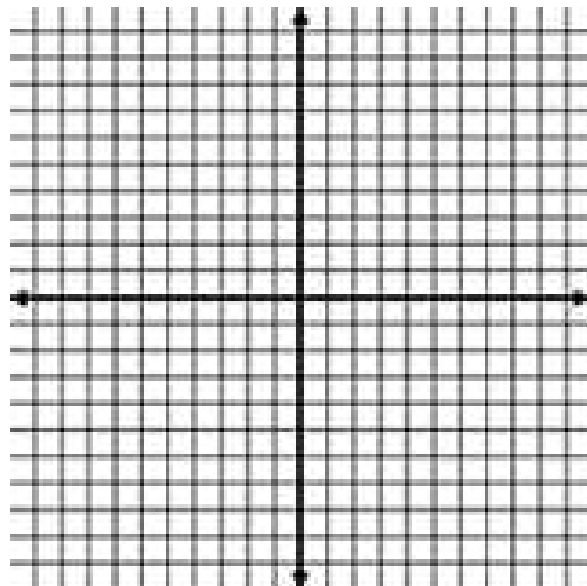
directions.

Example 3: Graph using the slope and y-intercept.

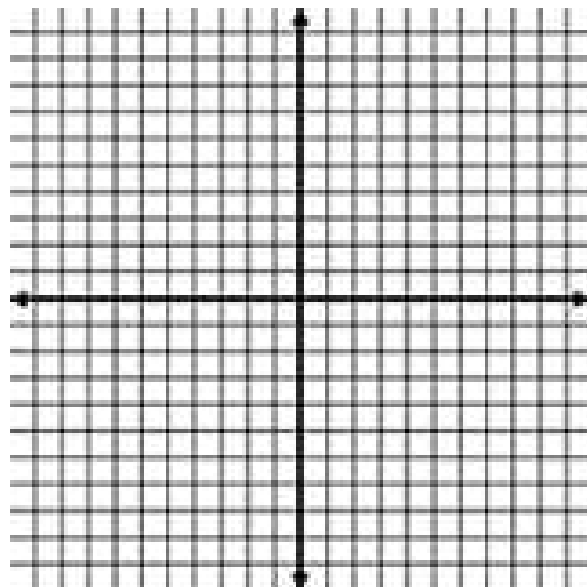
a. $y = -5x + 3$



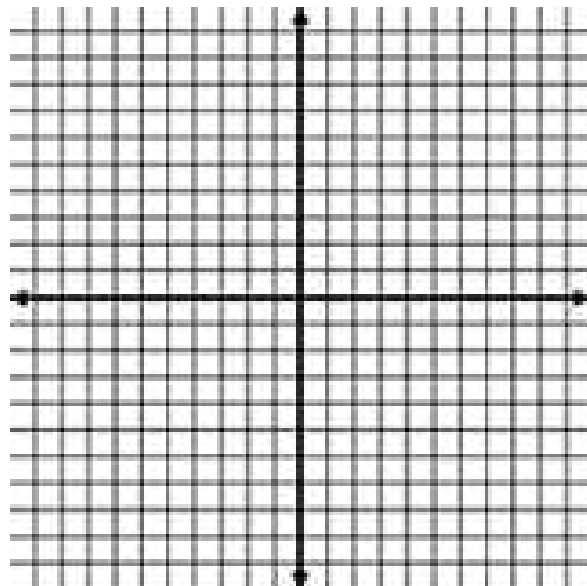
b. $10x - 5y = 25$



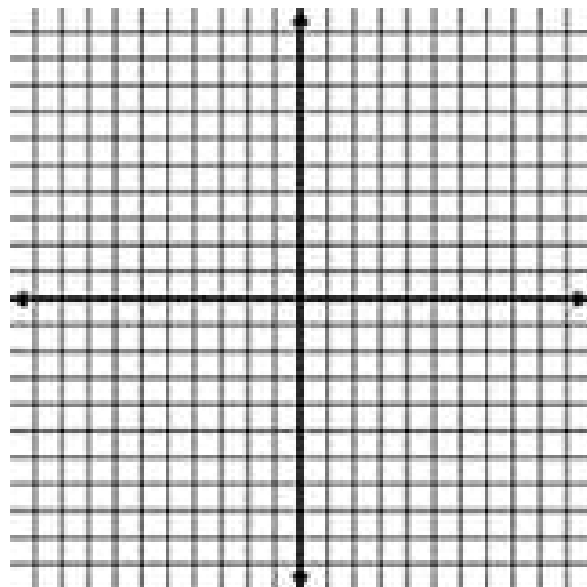
c. $x = 2y - 3$



d. $-y = x - 1$



e. $y = -\frac{6}{7}x + 4$



APPLICATION

Write an equation in the form of $y = mx + b$ of the line that is described.

- a. The y -intercept is -4 and the line is parallel to the line whose equation is $2x + y = 8$.
- b. The line falls from left to right. It passes through the origin and a second point with opposite x - and y -coordinates.