

Name _____ Class _____ Date _____

Learn It!



MA.8.A.1.2 Interpret the slope and the x - and y -intercepts when graphing a linear equation for a real-world problem.

Using Slopes and Intercepts (Student Textbook pp. 356–360)

Lesson Objective

Use slopes and intercepts to graph linear equations

Vocabulary

x -intercept _____

y -intercept _____

slope-intercept form _____

Example 1

Find the x -intercept and y -intercept of the line $4x - 3y = 12$. Use the intercepts to graph the equation.

Find the x -intercept ($y = \underline{\hspace{1cm}}$). Find the y -intercept ($x = \underline{\hspace{1cm}}$).

$$4x - 3y = 12$$

$$4x - 3y = 12$$

$$4x - 3(\underline{\hspace{1cm}}) = 12$$

$$4(\underline{\hspace{1cm}}) - 3y = 12$$

$$4x = 12$$

$$-3y = 12$$

$$\frac{4x}{4} = \frac{12}{4}$$

$$\frac{-3y}{-3} = \frac{12}{-3}$$

$$x = \underline{\hspace{1cm}}$$

$$y = \underline{\hspace{1cm}}$$

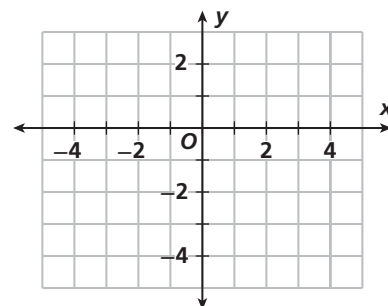
The x -intercept is _____.

The y -intercept is _____.

The graph of $4x - 3y = 12$ is the line that crosses

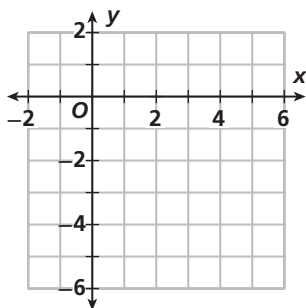
the x -axis at the point (_____) and the

y -axis at the point (_____).



Check It Out!

1. Find the x -intercept and y -intercept of the line $8x - 6y = 24$. Use the intercepts to graph the equation.



Example 2

Write each equation in slope-intercept form, and then find the slope and y -intercept.

A. $2x + y = 3$

$$2x + y = 3$$

— — Subtract — from both sides.

$$y = 3 - 2x$$

Rewrite to match slope-intercept form.

$y =$ — The equation is in —-intercept form.

$m =$ — $b =$ —

The slope of the line $2x + y = 3$ is —, and the y -intercept is —.

B. $5y = 3x$

$$\frac{5y}{5} = \frac{3x}{5}$$

Divide both sides by —.

$$y = \boxed{} x$$

Rewrite the equation in — form.

$$y = \boxed{} x + \boxed{}$$

$m =$ — $b =$ —

The slope of the line $5y = 3x$ is — and the y -intercept is —.