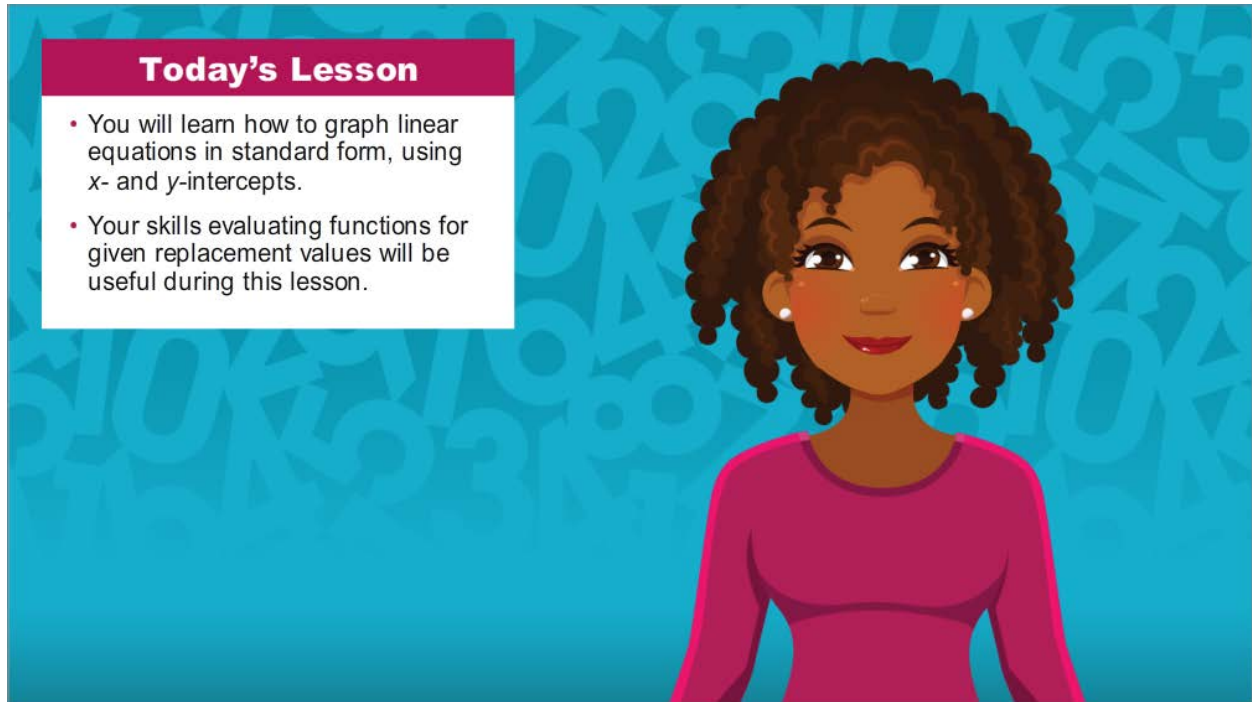


## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Introduction



**Today's Lesson**

- You will learn how to graph linear equations in standard form, using  $x$ - and  $y$ -intercepts.
- Your skills evaluating functions for given replacement values will be useful during this lesson.

Hello and welcome! I'm so glad you could join me for this lesson in Algebra I, where you will learn how to graph linear equations in standard form, by using  $x$ - and  $y$ -intercepts. Your skills evaluating functions for given replacement values will be useful during this lesson.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Standard Form of a Linear Equation

### STANDARD FORM OF A LINEAR EQUATION

$$Ax + By = C$$

In a standard equation,  $A$  and  $B$  cannot both be equal to zero.

$$Ax + By = C$$

$$Ax + By = C$$

$$9x + 6y = -18$$

$$1x - 2y = 22$$

$$Ax + By = C$$

The standard form of a linear equation is  $Ax + By = C$ , where  $A$ ,  $B$ , and  $C$  are integers. In a standard equation  $A$  and  $B$  cannot both equal zero.

$$Ax + By = C$$

One example of a linear equation in standard form is  $9x + 6y = -18$ . In this case,  $A = 9$ ,  $B = 6$ , and  $C = -18$ .

$$9x + 6y = -18$$

Another example is  $x - 2y = 22$ . Here,  $A = 1$ ,  $B = -2$ , and  $C = 22$ .

$$1x - 2y = 22$$

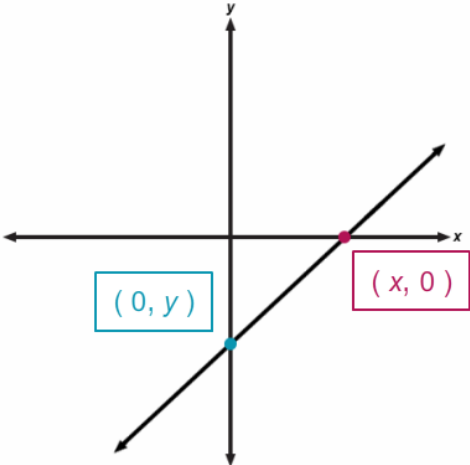
## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Graphing Using $X$ - and $Y$ -Intercepts

### GRAPHING USING $X$ - AND $Y$ -INTERCEPTS

1. Evaluate the function where  $x = 0$  to find the  $y$ -intercept.
2. Evaluate the function where  $y = 0$  to find the  $x$ -intercept.
3. Plot the  $y$ -intercept on the coordinate plane.
4. Plot the  $x$ -intercept on the coordinate plane.
5. Draw a line that passes through the two points.



The diagram shows a Cartesian coordinate system with a horizontal  $x$ -axis and a vertical  $y$ -axis. A straight line with a positive slope is drawn, intersecting the  $y$ -axis at a point marked with a blue dot and labeled  $(0, y)$  in a blue box. The line also intersects the  $x$ -axis at a point marked with a red dot and labeled  $(x, 0)$  in a red box. Arrows at the ends of the axes indicate they extend infinitely in both directions.

To graph a linear equation using  $x$ - and  $y$ -intercepts you will need to:

1. Evaluate the function where  $x = 0$  to find the  $y$ -intercept.
2. Evaluate the function where  $y = 0$  to find the  $x$ -intercept.
3. Plot the  $y$ -intercept on the coordinate plane.
4. Plot the  $x$ -intercept on the coordinate plane.
5. Draw a line that passes through the two points.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Graphing Linear Equations in Standard Form

**GRAPHING LINEAR EQUATIONS  
IN STANDARD FORM**

**Click the Examples Below to Learn More**

Example One

Example Three

Example Two

Self-Check

Click the examples below to learn more.

- [Example One](#)
- [Example Two](#)
- [Example Three](#)
- [Self-Check](#)

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 1

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$4x + 6y = 12$$

Evaluate the function where  $x = 0$  to find the  $y$ -intercept.

$$4x + 6y = 12$$

$$4(0) + 6y = 12$$

$$0 + 6y = 12$$

$$6y = 12$$

$$\frac{6y}{6} = \frac{12}{6}$$

$$y = 2$$

$$(0, 2)$$

The first step to graphing the linear equation is to determine the  $y$ -intercept by evaluating the function where  $x = 0$ .

Substitute 0 for  $x$ . The left side of the equation will then simplify to,  $0 + 6y$ , which further simplifies to  $6y$ . You are then left with the equation,  $6y = 12$ .

Solve the equation for  $y$  by dividing each side by 6. The result is  $y = 2$ .

You have determined that when  $x = 0$ ,  $y = 2$ . This means that the coordinates of the  $y$ -intercept of the linear equation are  $(0, 2)$ .

Evaluate the function where  $y = 0$  to find the  $x$ -intercept.

$$4x + 6y = 12$$

$$4x + 6(0) = 12$$

$$4x + 0 = 12$$

$$4x = 12$$

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

$$x = 3$$

$$(3, 0)$$

The next step is to determine the  $x$ -intercept by evaluating the function where  $y = 0$ .

Substitute 0 for  $y$ . The left side of the equation will then simplify to,  $4x + 0$ , which further simplifies to  $4x$ . You are then left with the equation,  $4x = 12$ .

Solve the equation for  $x$  by dividing each side by 4. The result is  $x = 3$ .

You have now found that  $x = 3$  when  $y = 0$ . This means that the coordinates of the  $x$ -intercept of the linear equation are  $(3, 0)$ .

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 1 (continued)

#### EXAMPLE 1

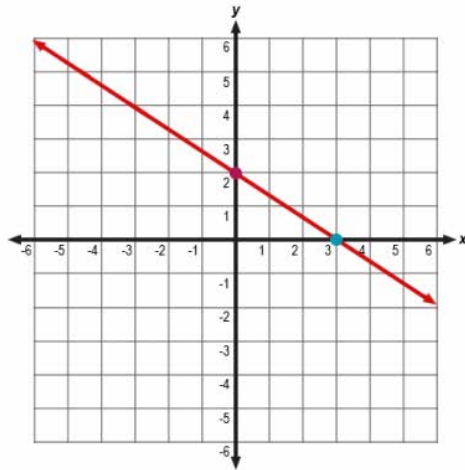
Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$4x + 6y = 12$$

$(0, 2)$

$(3, 0)$

**$y$ -intercept**    **$x$ -intercept**



Now you are ready to graph.

Plot the  $y$ -intercept  $(0, 2)$ .

Next, plot the  $x$ -intercept  $(3, 0)$ .

Now, graph the line that passes through the two points.

Your work is complete. You have graphed the linear equation  $4x + 6y = 12$  using  $x$ - and  $y$ -intercepts.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 2

**EXAMPLE 2**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

Evaluate the function where  $x = 0$  to find the  $y$ -intercept.  
The  $y$ -intercept is...

**(0, 3)**   **(0, 0)**   **(0, -3)**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

The first step to graphing the linear equation is to determine the  $y$ -intercept.

Evaluate the function where  $x = 0$  to find the  $y$ -intercept.

The  $y$ -intercept is...

- A) (0, 3)
- B) (0, 0)
- C) (0, -3)

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 2 (continued)

### EXAMPLE 2

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$

**$y$ -intercept**

When  $x = 0$ ,  $y = -3$ . Therefore, the coordinates of the  $y$ -intercept of the linear equation are  $(0, -3)$ .

( 0, -3)

To find the  $y$ -intercept, substitute 0 for  $x$  and solve for  $y$ .

$$3x - 5y = 15$$
$$3(0) - 5y = 15 \quad \text{Substitute 0 for } x.$$
$$-5y = 15 \quad \text{Simplify the left side of the equation.}$$
$$\frac{-5y}{-5} = \frac{15}{-5} \quad \text{Divide each side by } -5.$$
$$y = -3 \quad \text{The solution is } y = -3.$$

Next

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

When  $x = 0$ ,  $y = -3$ . Therefore, the coordinates of the  $y$ -intercept of the linear equation are  $(0, -3)$ .

To find the  $y$ -intercept, substitute 0 for  $x$  and solve for  $y$ .

$$3x - 5y = 15$$

$$3(0) - 5y = 15 \quad \text{Substitute 0 for } x.$$

$$-5y = 15 \quad \text{Simplify the left side of the equation.}$$

$$\frac{-5y}{-5} = \frac{15}{-5} \quad \text{Divide each side by } -5.$$

$$y = -3 \quad \text{The solution is } y = -3.$$



## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 2 (continued)

**EXAMPLE 2**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$   
 **$y$ -intercept**

Evaluate the function where  $y = 0$  to find the  $x$ -intercept.  
The  $x$ -intercept is...

**$(5, 0)$**     **$(0, 0)$**     **$(-5, 0)$**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

The second step is to determine the  $x$ -intercept.

Evaluate the function where  $y = 0$  to find the  $y$ -intercept.

The  $x$ -intercept is...

- A)  $(5, 0)$
- B)  $(0, 0)$
- C)  $(-5, 0)$

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 2 (continued)

### EXAMPLE 2

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

(0, -3)      (5, 0)

**y-intercept**    **x-intercept**

When  $y = 0$ ,  $x = 5$ . Therefore, the coordinates of the  $x$ -intercept of the linear equation are (5, 0).

(5, 0)

To find the  $x$ -intercept, substitute 0 for  $y$  and solve for  $x$ .

$$3x - 5y = 15$$
$$3x - 5(0) = 15 \quad \text{Substitute 0 for } y.$$
$$3x = 15 \quad \text{Simplify the left side of the equation.}$$
$$\frac{3x}{3} = \frac{15}{3} \quad \text{Divide each side by 3.}$$
$$x = 5 \quad \text{The solution is } x = 5.$$

Next

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

When  $y = 0$ ,  $x = 5$ . Therefore, the coordinates of the  $x$ -intercept of the linear equation are (5, 0).

To find the  $x$ -intercept, substitute 0 for  $y$  and solve for  $x$ .

$$3x - 5y = 15$$
$$3x - 5(0) = 15 \quad \text{Substitute 0 for } y.$$
$$3x = 15 \quad \text{Simplify the left side of the equation.}$$
$$\frac{3x}{3} = \frac{15}{3} \quad \text{Divide each side by 3.}$$
$$x = 5 \quad \text{The solution is } x = 5.$$

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

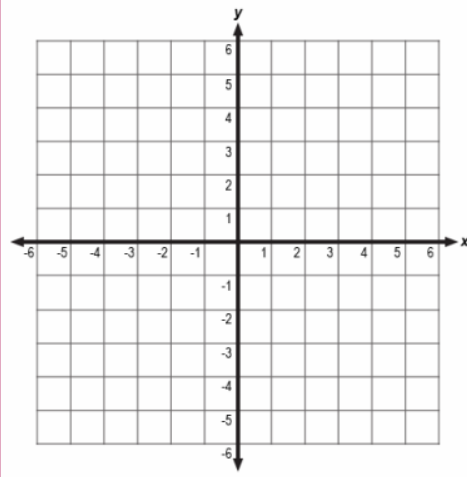
Example 2 (continued)

#### EXAMPLE 2

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$        $(5, 0)$   
 **$y$ -intercept**    **$x$ -intercept**



Plot the  $y$ -intercept on the graph above, by clicking the appropriate spot.

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

Now you are ready to graph. Plot the  $y$ -intercept on the graph above, by click the appropriate spot.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

Example 2 (continued)

**EXAMPLE 2**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$        $(5, 0)$

**$y$ -intercept**    **$x$ -intercept**

You have correctly plotted the  $y$ -intercept.

$(0, -3)$

**Next**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

You have correctly plotted the  $y$ -intercept  $(0, -3)$ .

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

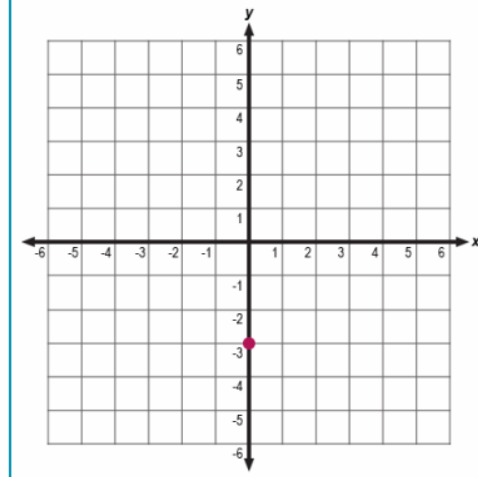
Example 2 (continued)

#### EXAMPLE 2

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$        $(5, 0)$   
 **$y$ -intercept**    **$x$ -intercept**



Plot the  $x$ -intercept on the graph above, by clicking the appropriate spot.

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

Next, plot the  $x$ -intercept  $(5, 0)$ .

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

Example 2 (continued)

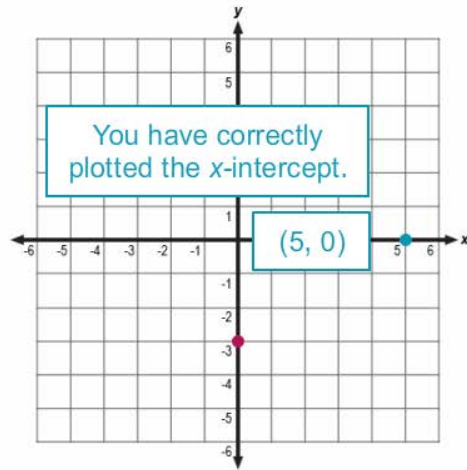
#### EXAMPLE 2

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

$(0, -3)$        $(5, 0)$

**$y$ -intercept**     **$x$ -intercept**



Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$3x - 5y = 15$$

You have correctly plotted the  $x$ -intercept  $(5, 0)$ .

**Module 8: Graphing Linear Equations**  
**Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts**

Example 2 (continued)

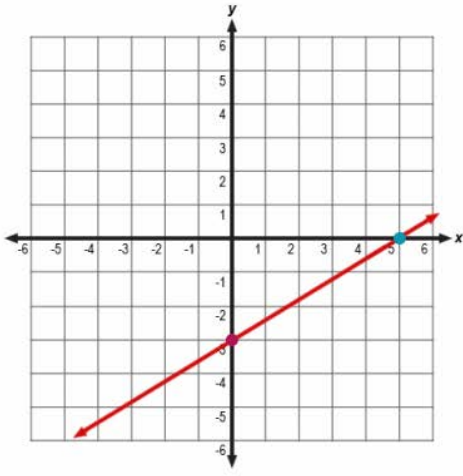
**EXAMPLE 2**

Graph the linear equation below using x- and y-intercepts.

$$3x - 5y = 15$$

$(0, -3)$        $(5, 0)$

**y-intercept**    **x-intercept**



[Menu](#)

Graph the linear equation below using x- and y-intercepts.

$$3x - 5y = 15$$

Now, graph the line that passes through the two points. Your work is complete.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 3

**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$   
 **$y$ -intercept**

**Slope-Intercept Form**

$$y = mx + b$$
$$y = 3x - 3$$

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

Notice that this linear equation is in slope-intercept form, where  $m$  represents the slope and  $b$  represents the  $y$ -intercept. Slope-intercept form allows you to easily determine the coordinates of the  $y$ -intercept. In this case  $b = -3$ . So the coordinates of the  $y$ -intercept are  $(0, -3)$ .



## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 3 (continued)

**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$   
 **$y$ -intercept**

Evaluate the function where  $y = 0$  to find the  $x$ -intercept. Enter the coordinates of the  $x$ -intercept below, and then click submit.

(  ,  )

**Standard Form**

$$Ax + By = C$$
$$y = 3x - 3$$
$$\underline{-3x \quad -3x}$$
$$-3x + y = -3$$

[Submit](#)

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

To determine the coordinates of the  $x$ -intercept, represent the equation in standard form. Subtract  $3x$  from each side of the equation. The result is  $-3x + y = -3$ . The equation is now in standard form.

Next, evaluate the function where  $y = 0$  to find the  $x$ -intercept. Enter the coordinates of the  $x$ -intercept below, and then click submit.

(?, ?)

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 3 (continued)

**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

(0, -3)      (1, 0)

**y-intercept**    **x-intercept**

When  $y = 0$ ,  $x = 1$ . Therefore, the coordinates of the  $x$ -intercept of the linear equation are  $(1, 0)$ .

( 1 , 0 )

To find the  $x$ -intercept, substitute 0 for  $y$  and solve for  $x$ .

$$-3x + y = -3$$
$$-3x + (0) = -3 \quad \text{Substitute 0 for } y.$$
$$\begin{array}{r} -3x = -3 \\ \hline -3 \quad -3 \end{array}$$

$x = 1$     The solution is  $x = 1$ .

Next

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

When  $y = 0$ ,  $x = 1$ . Therefore, the coordinates of the  $x$ -intercept of the linear equation are  $(1, 0)$ .

To find the  $x$ -intercept, substitute 0 for  $y$  and solve for  $x$ .

$$\begin{array}{l} -3x + y = -3 \\ -3x + (0) = -3 \quad \text{Substitute 0 for } y. \\ -3x = -3 \quad \text{Simplify the left side of the equation.} \\ \frac{-3}{-3} = \frac{-3}{-3} \quad \text{Divide each side by } -3. \\ x = 1 \quad \text{The solution is } x = 1. \end{array}$$

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

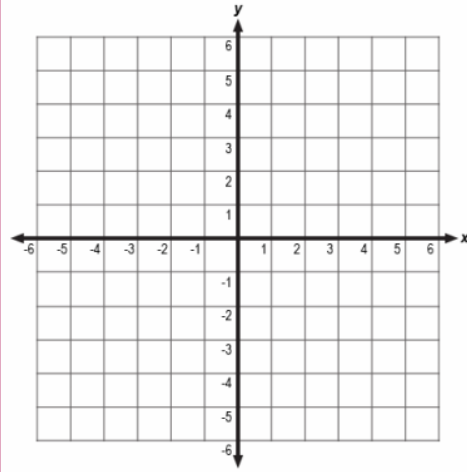
Example 3 (continued)

#### EXAMPLE 3

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$        $(1, 0)$   
 **$y$ -intercept**    **$x$ -intercept**



Plot the  $y$ -intercept on the graph above, by clicking the appropriate spot.

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

Now you are ready to graph. Plot the  $y$ -intercept  $(0, -3)$ .

Plot the  $y$ -intercept on the graph above, by click the appropriate spot.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 3 (continued)

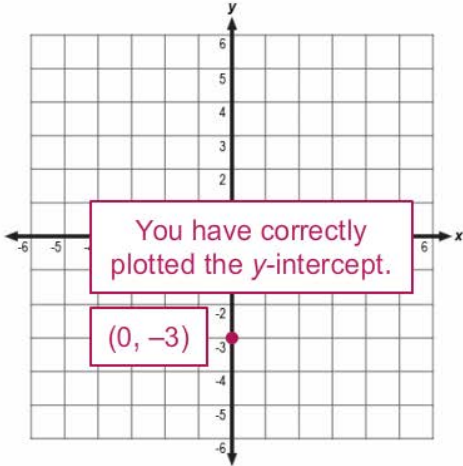
**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$        $(1, 0)$

**$y$ -intercept**     **$x$ -intercept**



Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

You have correctly plotted the  $y$ -intercept  $(0, -3)$ .

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

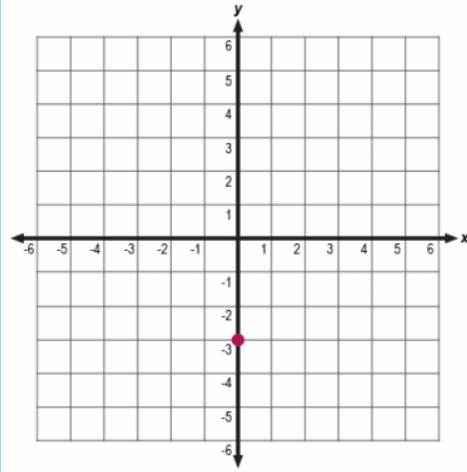
Example 3 (continued)

#### EXAMPLE 3

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$        $(1, 0)$   
 **$y$ -intercept**    **$x$ -intercept**



Plot the  $x$ -intercept on the graph above, by clicking the appropriate spot.

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

Next, plot the  $x$ -intercept  $(1, 0)$ .

Plot the  $x$ -intercept on the graph above, by click the appropriate spot.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

Example 3 (continued)

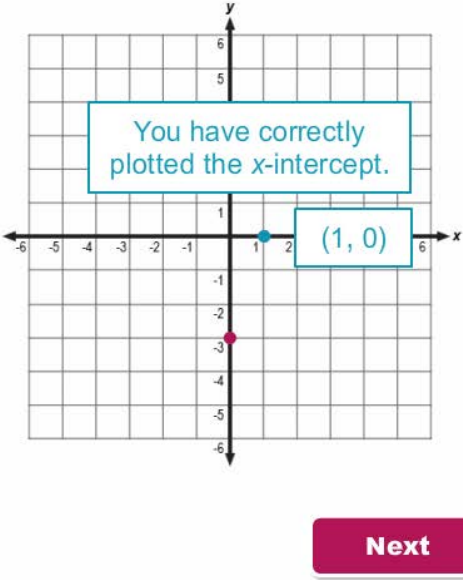
**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

(0, -3)      (1, 0)

**y-intercept**   **x-intercept**



**Next**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

You have correctly plotted the  $y$ -intercept (1, 0).

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Example 3 (continued)

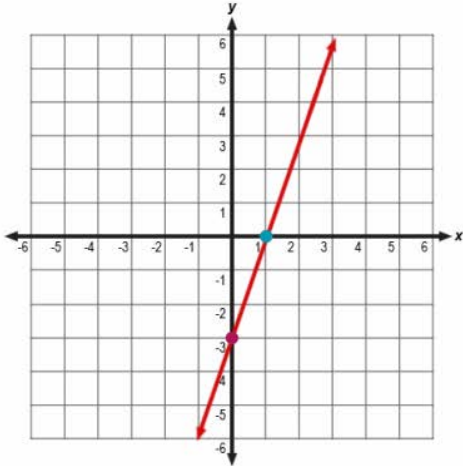
**EXAMPLE 3**

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$

$(0, -3)$        $(1, 0)$

**$y$ -intercept**     **$x$ -intercept**



[Menu](#)

Graph the linear equation below using  $x$ - and  $y$ -intercepts.

$$y = 3x - 3$$


Now, graph the line that passes through the two points.

Your work is complete. You have graphed the linear equation  $y = 3x - 3$  using  $x$ - and  $y$ -intercepts.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Self-Check 1

**Self-Check**

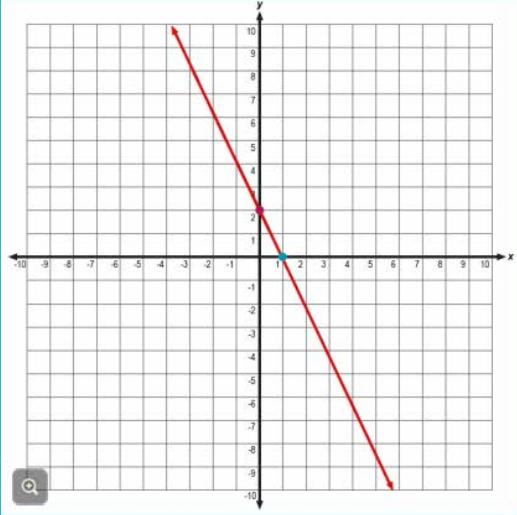
Which of the graphs represents the linear equation below? Use graph paper to graph the line, and then choose your answer.

$$x + 2y = 8$$

- Graph A
- Graph B
- Graph C

**SUBMIT**

### Graph A



CLICK HERE to view additional options.

Solve the problem in the image above to check your understanding of the content.



## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Self-Check 1: Answer

**Self Check** **Graph A**

**Correct**

That's correct!

Evaluate the function where  $x = 0$  to find the y-intercept.

$$x + 2y = 8$$
$$0 + 2y = 8 \quad \text{Substitute 0 for } x.$$
$$2y = 8 \quad \text{Simplify the left side of the equation.}$$
$$\frac{2y}{2} = \frac{8}{2} \quad \text{Divide each side by 2.}$$
$$y = 4 \quad \text{The solution is } y = 4.$$

The coordinates of the y-intercept are  $(0, 4)$ .

Evaluate the function where  $y = 0$  to find the x-intercept.

$$x + 2y = 8$$
$$x + 2(0) = 8 \quad \text{Substitute 0 for } y.$$
$$x = 8 \quad \text{The solution is } x = 8.$$

Therefore, the coordinates of the x-intercept are  $(8, 0)$ .

Step One Step Two Continue

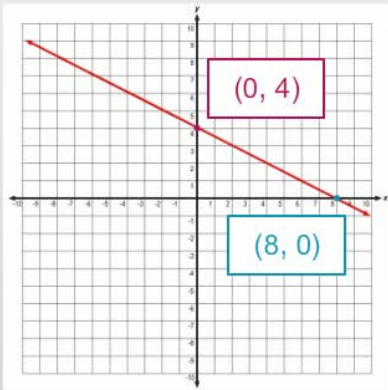
**SUBMIT** [CLICK HERE to view additional options.](#)

**Self Check** **Graph A**

**Correct**

Next, plot the x-intercept and y-intercept on the coordinate plane. Then, draw the line that passes through the points.

The correct answer is Graph B.



Step One Step Two Continue


**SUBMIT** [CLICK HERE to view additional options.](#)

For your reference, the images above shows the correct solution to the self-check problem.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Self-Check 2

 **Self-Check**

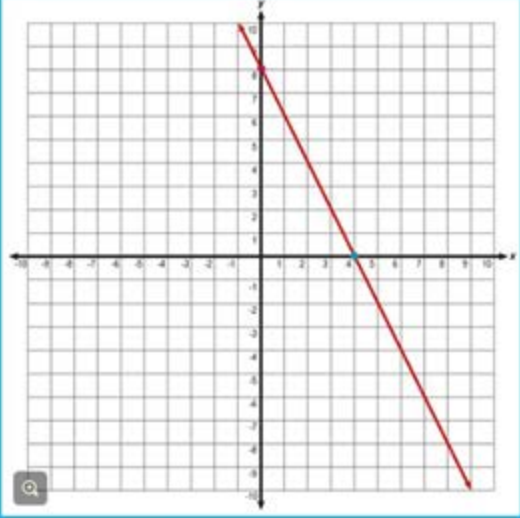
Which of the graphs represents the linear equation below? Use graph paper to graph the line, and then choose your answer.

$y = -2x + 8$

- Graph A
- Graph B
- Graph C

**SUBMIT**

### Graph A



[CLICK HERE](#) to view additional options.

Solve the problem in the image above to check your understanding of the content.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using x- and y-Intercepts

#### Self-Check 2: Answer

**Self Check** **Graph A**

**Correct**

That's correct! The linear equation  $y = -2x + 8$  is in slope-intercept form,  $y = mx + b$ , where  $m$  represents the slope and  $b$  represents the  $y$ -intercept. In this equation,  $b = 8$ . Therefore, the coordinates of the  $y$ -intercept are  $(0, 8)$ .

To find the  $x$ -intercept, represent the equation in standard form.

$$\begin{array}{r} y = -2x + 8 \\ +2x \quad +2x \\ \hline 2x + y = 8 \end{array}$$

Then substitute 0 for  $y$  to find the  $x$ -intercept.

$$2x + y = 8$$
$$2x + (0) = 8 \quad \text{Substitute 0 for } y.$$
$$\frac{2x}{2} = \frac{8}{2} \quad \begin{array}{l} \text{Simplify the left side} \\ \text{of the equation.} \\ \text{Divide each side by 2.} \end{array}$$
$$x = 4 \quad \text{The solution is } x = 4.$$

Therefore, the coordinates of the  $x$ -intercept are  $(4, 0)$ .

Step One Step Two Continue

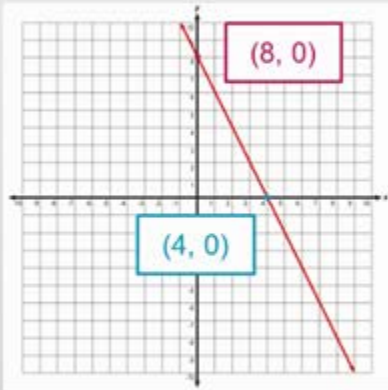
**SUBMIT** [CLICK HERE to view additional options.](#)

**Self Check** **Graph A**

**Correct**

Next, plot the  $x$ -intercept and  $y$ -intercept on the coordinate plane. Then, draw the line that passes through the points.

The correct answer is Graph A.



Step One Step Two Continue

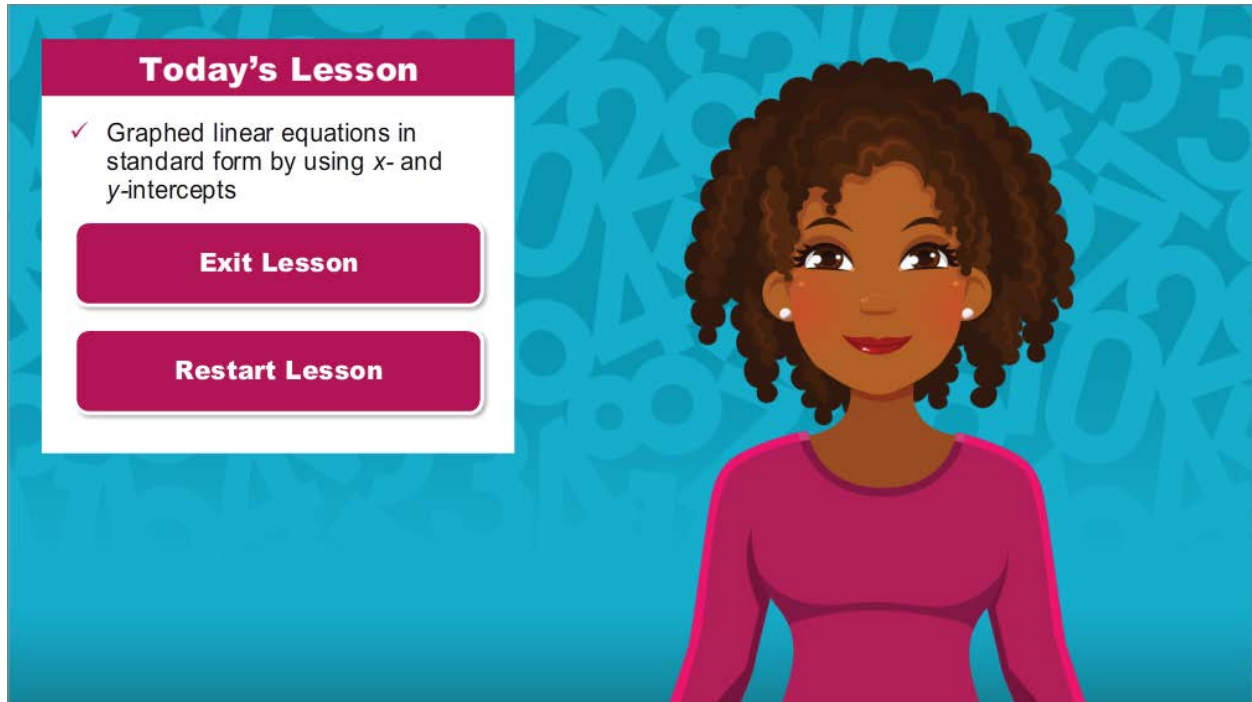
**SUBMIT** [CLICK HERE to view additional options.](#)

For your reference, the images above shows the correct solution to the self-check problem.

## Module 8: Graphing Linear Equations

### Topic 2 Content: Graphing a Linear Equation Using $x$ - and $y$ -Intercepts

#### Conclusion



The image shows a digital interface for a lesson conclusion. On the right is a cartoon illustration of a young woman with dark curly hair, wearing a pink long-sleeved shirt. On the left is a white sidebar with a pink header that says "Today's Lesson". Below the header, there is a checkmark icon followed by the text "Graphed linear equations in standard form by using  $x$ - and  $y$ -intercepts". At the bottom of the sidebar are two pink buttons: "Exit Lesson" and "Restart Lesson". The background of the entire interface is a teal color with a pattern of faint, light blue mathematical symbols like pi, infinity, and numbers.

You have reached the conclusion of this lesson where you learned how to graph a linear equation in standard form by using  $x$ - and  $y$ -intercepts.