EXAMPLE 2 Use intercepts to graph an equation

Graph the equation $x + 2y = 4$.

Solution

STEP 1 **Find** the intercepts.

$x + 2y = 4$

$x + 2(0) = 4$

$x = 4$ ← ***x*-intercept**

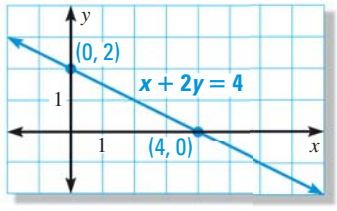
$x + 2y = 4$

$0 + 2y = 4$

$y = 2$ ← ***y*-intercept**

STEP 2 **Plot** points. The x-intercept is 4, so plot the point $(4, 0)$. The y-intercept is 2, so plot the point $(0, 2)$. Draw a line through the points.

Animated Algebra at classzone.com

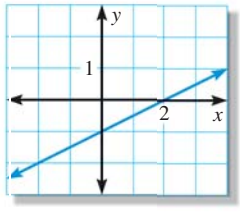


CHECK A GRAPH

Be sure to check the graph by finding a third solution of the equation and checking to see that the corresponding point is on the graph.

EXAMPLE 3 Use a graph to find intercepts

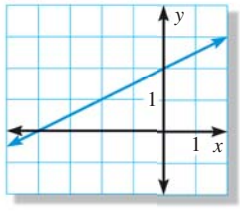
The graph crosses the x-axis at $(2, 0)$. The x-intercept is 2. The graph crosses the y-axis at $(0, -1)$. The y-intercept is -1.



✓ GUIDED PRACTICE for Examples 2 and 3

4. Graph $6x + 7y = 42$. Label the points where the line crosses the axes.

5. Identify the x-intercept and the y-intercept of the graph shown at the right.



KEY CONCEPT *For Your Notebook*

Relating Intercepts, Points, and Graphs

Intercepts	Points
The x intercept of a graph is a.	The graph crosses the x-axis at $(a, 0)$.
The y-intercept of a graph is b.	The graph crosses the y-axis at $(0, b)$.