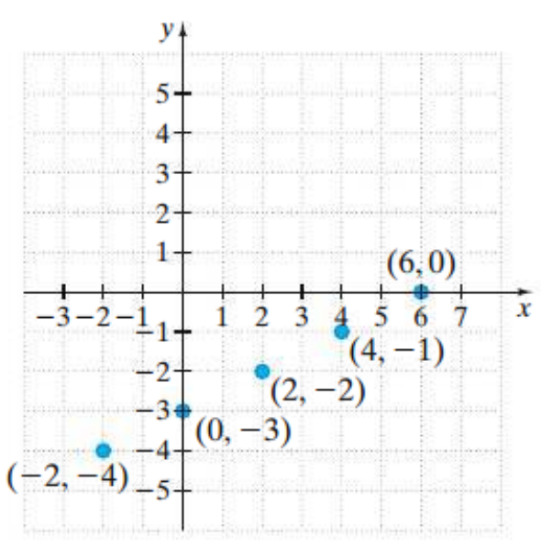
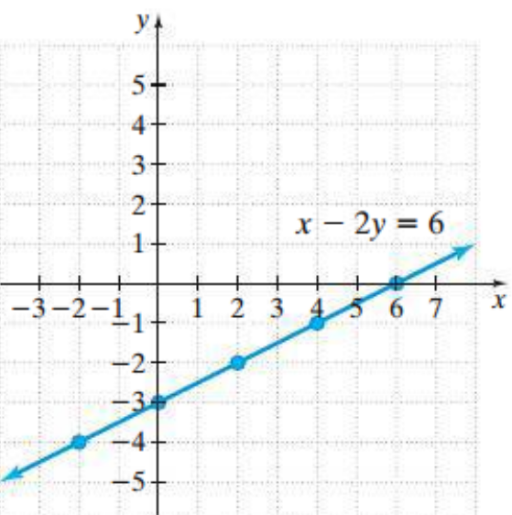
Section 3.2 Graphing Linear Equations

# Objective 1: Identifying Linear Equations

Consider the equation . Five solutions of the equation are shown on the graph below.



Notice that these solutions all lie on the same line. Every ordered pair solution of the equation corresponds to a point on this line, and every point on this line corresponds to an ordered pair solution. Thus, we say that this line is the **graph of the equation** .



The equation is called a **linear equation in two variables**. The graph of every linear equation in two variables is a line.

**Linear Equation in Two Variables:**

A linear equation in two variables is an equation that can be written in the form

where and are real numbers and and are not both .

The form is called **standard form**.

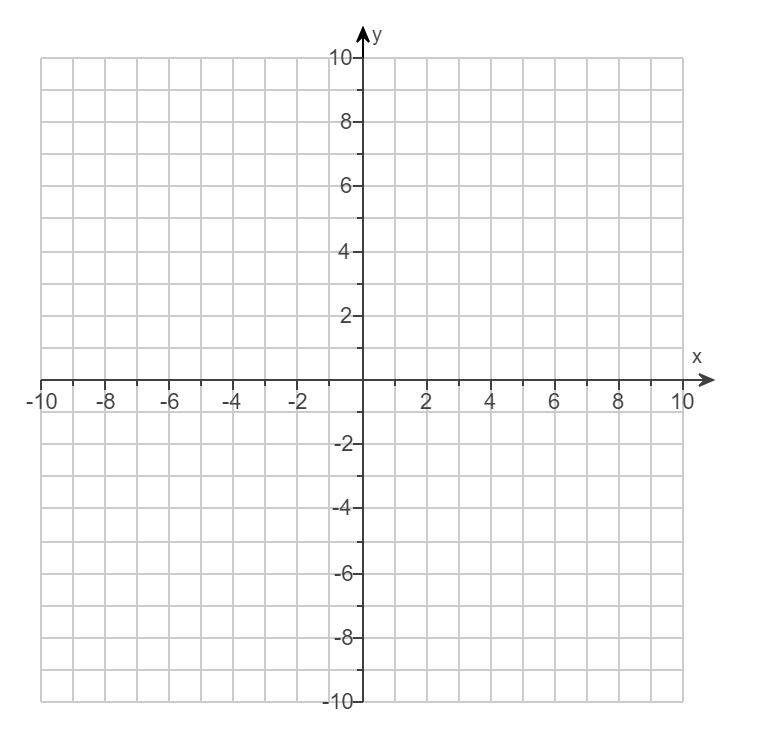
Determine whether each equation is a linear equation in two variables.

|  |  |
| --- | --- |
| a. | b. |
| c. | d. |

# Objective 2: Graphing Linear Equations by Plotting Ordered Pair Solutions

In order to graph a linear equation in two variables, we must know a minimum of two solutions of the equation.

a. Consider the linear equation . Find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.



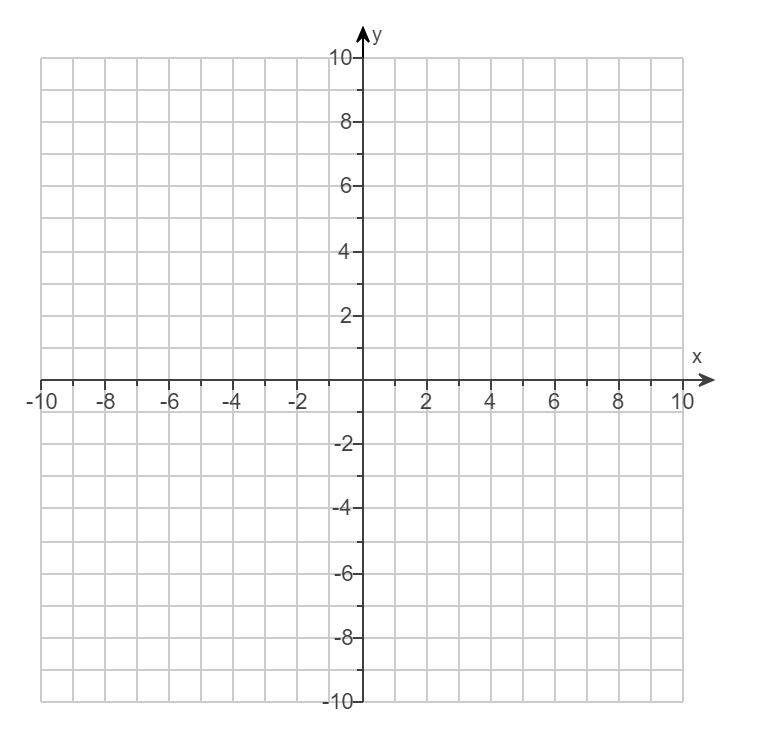
|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |

Graph each linear equation by finding at least two ordered pair solutions.

|  |  |
| --- | --- |
| b. Blank coordinate plane that spans from negative ten to positive ten on each axis with a scale of one unit. | c.  Blank coordinate plane that spans from negative ten to positive ten on each axis with a scale of one unit. |
| d.  Blank coordinate plane that spans from negative ten to positive ten on each axis with a scale of one unit. |  |

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e. Graph the linear equations and on the same coordinate plane. Then, compare the two graphs.



The graph of crosses the -axis at