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3-1 *Graphing Linear Equations*

Identify Linear Equations and Intercepts A **linear equation** is an equation that can be written in the form $Ax + By = C$. This is called the **standard form** of a linear equation.

Standard Form of a Linear Equation	$Ax + By = C$, where $A \geq 0$, A and B are not both zero, and A, B, and C are integers with a greatest common factor of 1

Example 1: Determine whether $y = 6 - 3x$ is a linear equation. Write the equation in standard form.

Example 2: $3xy + y = 4 + 2x$

Exercises

Determine whether each equation is a linear equation. Write *yes* or *no*. If yes, write the equation in standard form and identify A, B & C.

1. $2x = 4y$

2. $6 + y = 8$

4. $3xy + 8 = 4y$

5. $3x - 4 = 12$

6. $y = x^2 + 7$

7. $y - 4x = 9$

8. $-2x + 3 = 4y$

9. $\frac{1}{4}y = 12 - 4x$

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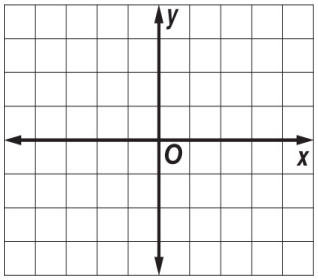
3-1 *(continued)* Graphing Linear Equations using intercepts.

***x*-intercept:**

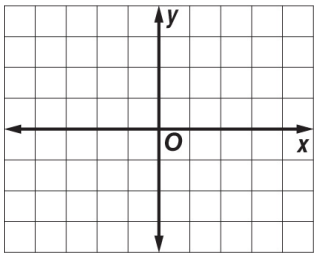
***y*-intercept:**

Example 1: Graph $3x + 2y = 6$ by using the *x*- and *y*-intercepts.

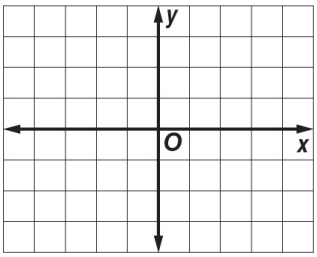


Graph each equation by using the *x*– and *y*-intercepts.

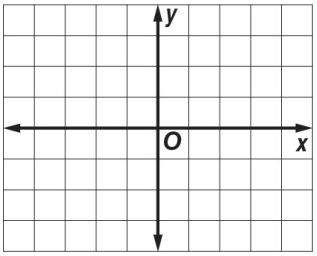
1. $2x + y = -2$



2. $3x - 6y = -3$



3. $-2x + y = -2$



4. $y = \frac{1}{2}x + 2$