

Study Guide

Graphing Linear Equations

An equation whose graph is a straight line is called a **linear equation**.

Definition of Linear Equation

A **linear equation** is an equation that can be written in the form $Ax + By = C$, where A , B , and C are any numbers and A and B are not both 0.

Drawing the Graph of a Linear Equation

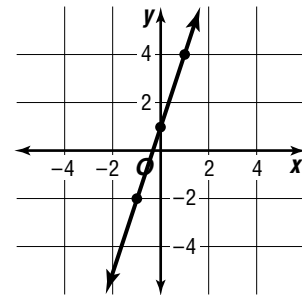
1. Solve the equation for one variable.
2. Set up a table of values for the variables.
3. Graph the ordered pairs and connect them with a line.

Example: Draw the graph of $y - 3x = 1$.

$$y - 3x = 1$$

$$y = 3x + 1$$

x	$3x + 1$	y	(x, y)
-1	$3(-1) + 1$	-2	$(-1, -2)$
0	$3(0) + 1$	1	$(0, 1)$
1	$3(1) + 1$	4	$(1, 4)$



Determine whether each equation is a linear equation. If an equation is linear, rewrite it in the form $Ax + By = C$.

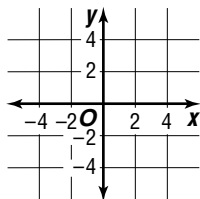
1. $4x - 2y = -1$

2. $\frac{x}{3} = 5$

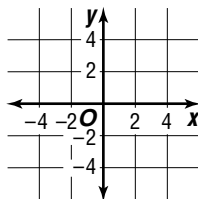
3. $y = x^2 + 7$

Graph each equation.

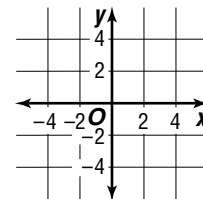
4. $3x + 2y = 6$



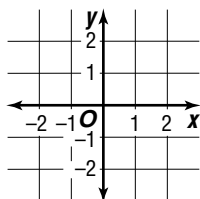
5. $m + 2n = 4$



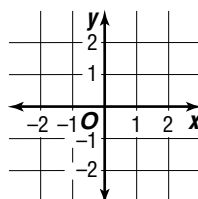
6. $3p + q = -2$



7. $3a - 6b = -3$



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



9. $\frac{1}{4}x + \frac{3}{4}y = 6$

