

Graphing Lines, Parallel & Perpendicular Lines

This worksheet will cover two methods for graphing a line. One method is to find the intercepts and the second method is to use the slope and a point on the line.

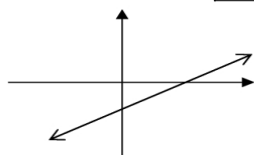
The x -intercept is found by setting $y = 0$ and solving for x . The y -intercept is found by setting $x = 0$ and solving for y . Each intercept represents a point on the line. Graph each intercept and connect the dots.

Example 1: Graph the line $2x - 3y = 6$ by finding the intercepts.

Solution: First, we must find the intercepts.

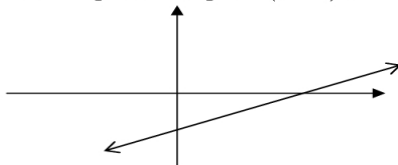
Let $y = 0$. $2x - 3(0) = 6$, $2x = 6$, $x = 3$. The x -intercept is $(3, 0)$.

Let $x = 0$. $2(0) - 3y = 6$, $-3y = 6$, $y = -2$. The y -intercept is $(0, -2)$.



Example 2: Graph the line that has slope $m = \frac{1}{2}$ and passes through the point $(2, -1)$.

Solution: To graph the line, we must start at the point $(2, -1)$. Since the slope is $\frac{1}{2}$, this means we will move 1 unit up from the point $(2, -1)$, and 2 units to the right.



Parallel and Perpendicular Lines

Parallel lines are lines that never intersect and whose slopes are equal. Perpendicular lines make a right angle at their intersection point and their slopes are negative reciprocals. In order to decide if two lines are parallel, perpendicular, or neither, you must first solve each equation for y to compare the slopes.