

Graphing Linear Equations

Quick Review	
Slope of a Line	$\frac{\text{Rise}}{\text{Run}} = \frac{\text{Change in } y}{\text{Change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$
y-intercept	The point where the line crosses the y-axis, $(0, b)$
x-intercept	The point where the line crosses the x-axis, $(a, 0)$
Equation of a Line	$y = mx + b$
Equation of a Vertical Line	$x = c$ (where c is a constant)
Equation of a Horizontal Line	$y = c$ (where c is a constant)

To Graph a line:

Method 1: Make a table of values and plotting points

Method 2: Plot the x-intercept and y-intercept and join them

Method 3: Plot a point on the line and use slope to find **other points**

Problems

1. Graph each line:

a. $y = 2x$ b. $y = -3x + 6$ c. $y = 5$

2. Graph each line:

- a. A line with x-intercept 5 and y-intercept -2.
- b. A line with y-intercept 3 and slope $\frac{1}{2}$.
- c. A line passing through (4, 4) and (14, 4)
- d. A line passing through (3, 1) with slope 3.
- e. A line with x-intercept -2 and slope 1.
- f. A line passing through (3, 1) with slope 0.

3. a. What is the slope of a line whose intercepts are (3, 0) and (8, 0)?
- b. What is the slope of the line $y = 5x - 8$?
- c. What is the y-intercept of the line $y = 3x - 18$?

4. a. What is the equation of a line whose slope is 8 and whose y -intercept is 1?
- b. What is the equation of a vertical line passing through $(5, -2)$?
- c. What is the equation of a horizontal line passing through $(5, -2)$?