Equation of a Straight Line in Functional Form

Recall: $y = ax + b$

slope ↗   y-intercept
              or initial value

Remember: The y-intercept or initial value is where a straight line crosses the Y-AXIS.

Example: Identify the slope and y-intercept

a) $y = 2x + 4$ b) $y = \frac{-1}{3}x + 7$ c) $y = \frac{14}{15}x - 12$

a = 2   a = $-\frac{1}{3}$ a = $\frac{14}{15}$

b = 4   b = 7   b = -12
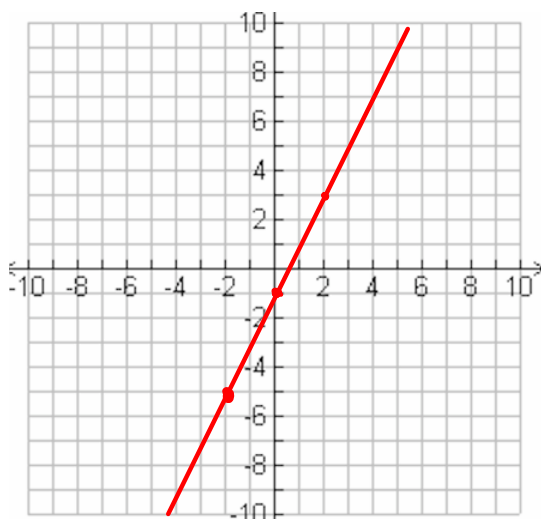
Graphing Lines using a Table of Values

Graph: $y = 2x - 1$

Solution: Make a table of values with at least 3 ordered pairs (points).

Rule of thumb: Use one negative, zero and a postive number

$y = 2x - 1$

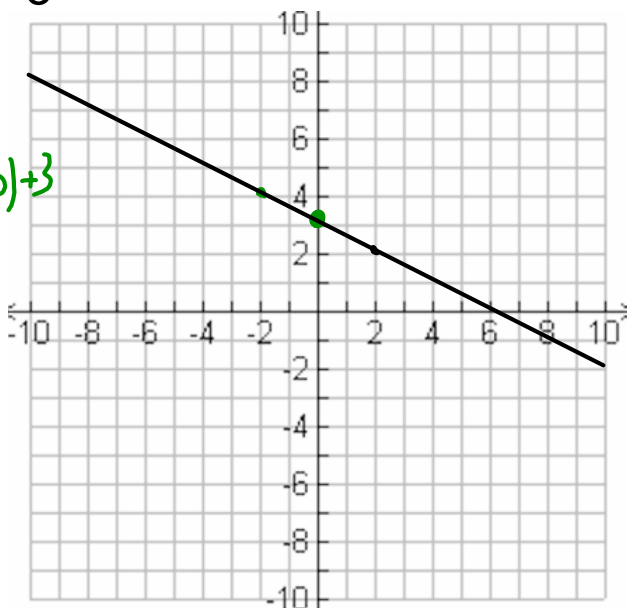| x	y
-2	-5
0	-1
2	3

1

2) Graph: $y = -\frac{1}{2}x + 3$

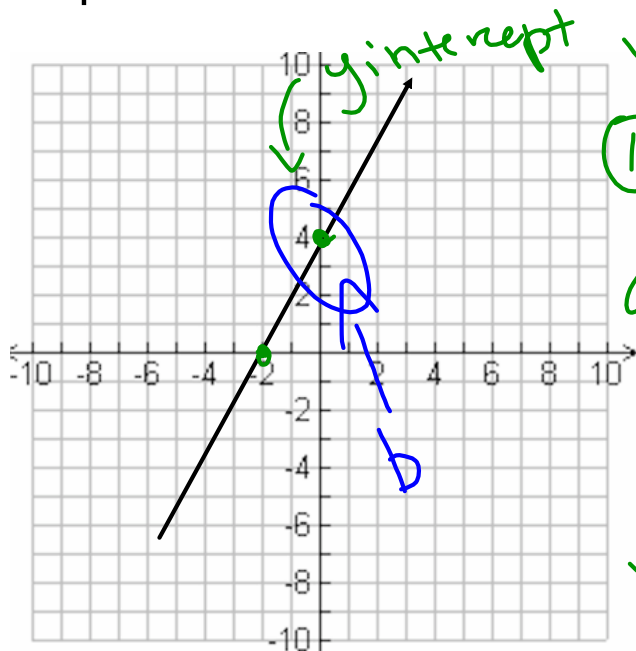| x	y
-2	4
0	3
2	2

$x = 0$

$y = -\frac{1}{2}(0) + 3$

$= 3$

3) Determine the slope, y-intercept and the equation of the line in functional form.

y-intercept

$y = ax + b$

$(x_1, y_1) \quad (x_2, y_2)$

① $(-2, 0) \quad (0, 4)$

$a = \frac{4 - 0}{0 + 2} = \frac{4}{2}$

$= 2$

$y = 2x + b$

② $y = 2x + 4$

2

Graph the following using a table of values:

1) $y = x - 5$

2) $y = 3x + 1$

3) $y = -1/2x + 4$

4) $y = 1/4x - 6$

5) $y = 2x - 8$

6) $y = 4x$

7) $y = -3x + 6$

8) $y = -x + 3$