Warm Up

Solve for the unknown variable.

1. $5x = -15$

$\frac{5x}{5} = \frac{-15}{5}$

$x = -3$

2. $5(x-2) = 4x + 10 + x$

$5x - 10 = 4x + 10 + x$

$5x - 10 = 5x + 10$

$-5x \quad -5x$

$-10 = 10$

NO solution

3. $4x + 5 - 2x + 1 = 40$

$2x + 6 = 40$

$-6 \quad -6$

$2x = 34$

$\frac{2x}{2} = \frac{34}{2}$

$x = 17$

4. $3(x-9) = 27$

$3x - 27 = 27$

$+27 \quad +27$

$\frac{3x}{3} = \frac{54}{3}$

$x = 18$

5. $2(2x+1) = 3(x-4) + 10$

$4x + 2 = 3x - 12 + 10$

$4x + 2 = 3x - 2$

$-3x \quad -3x$

$x + 2 = -2$

$-2 \quad -2$

$x = -4$

Sec1	Notes 1-3 Graphing Linear Equations (Part 1)	Unit 1

Linear Equation-

Straight line

Slope (Rate of Change)-

$M = \frac{\text{Rise}}{\text{run}} = \frac{\text{up or down}}{\text{right}}$

***X*-Intercept-**

where it is on the x-axis

***Y*-Intercept-**

b (on the y-axis)

Slope-Intercept Form-

$y = mx + b$

Horizontal Line-

$y = \#$

Vertical Line-

$x = \#$

Horizontal and Vertical Lines:

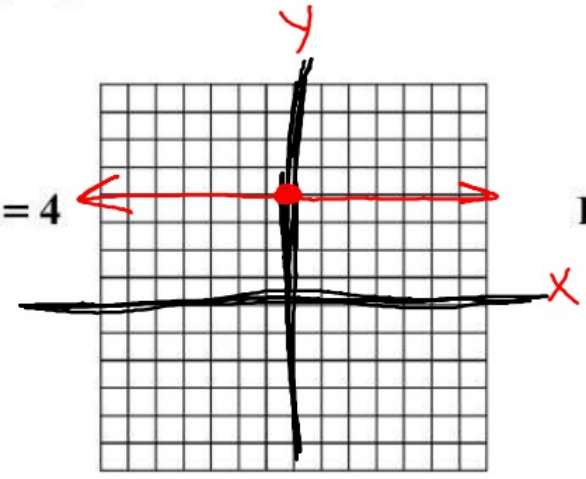
$y =$: Go to the y-axis & find the #, then draw ↔

$x =$: Go to the x-axis & find the #, then draw ↕

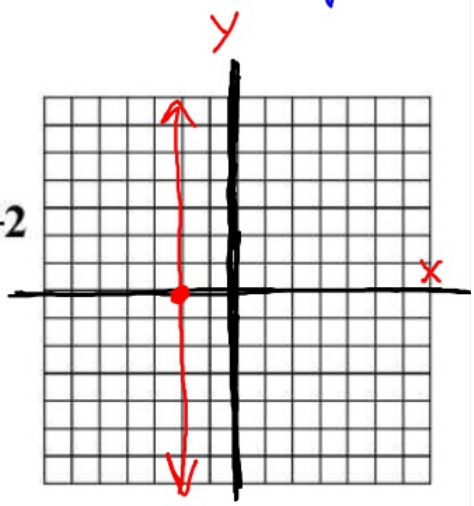
How to graph them:

Ex 1:

A. $y = 4$



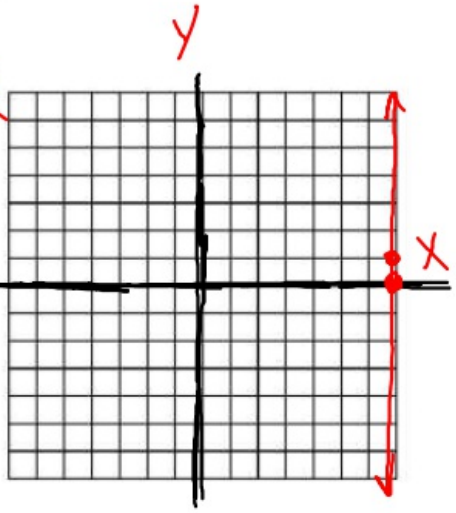
B. $x = -2$



C. $x = 7$

Slope = undefined

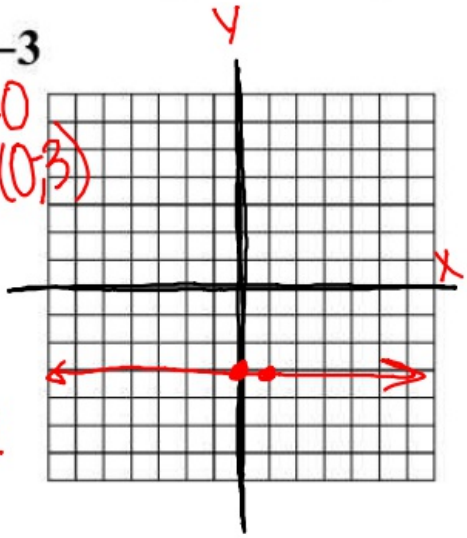
$\frac{\text{Rise}}{\text{Run}} = \frac{1}{0}$



D. $y = -3$

Slope = 0

y-int = (0, -3)



$\frac{\text{Rise}}{\text{Run}} \frac{0}{1}$

	Slope	y-intercept
Horizontal	0	check the graph
Vertical	undefined	DNE (does not exist)

Ex 2: Go back to Example 1 and determine the slope and y-intercept of each graph.

Ex 3: Identify the slope and *y*-intercept from each equation.

A. $y = -3x + 4$ slope = -3, y-int = (0, 4)

B. $y = \frac{3}{4}x + 11$ slope = $\frac{3}{4}$, y-int = (0, 11)

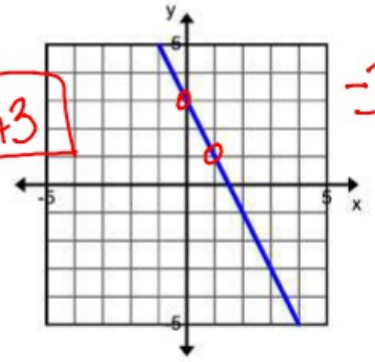
C. $y = -5x$ slope = -5, y-int (0, 0)

D. $y = x$ slope = 1, y-int (0, 0)

Write equations

Ex 4: ~~Identify the slope & y-intercept from the graph.~~

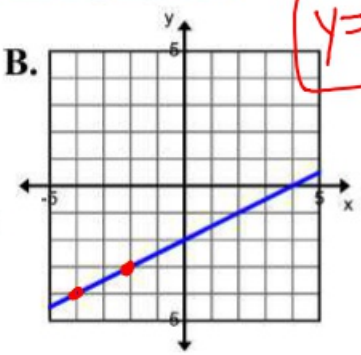
A.



$y = -2x + 3$

$\frac{-2}{1} = -2$

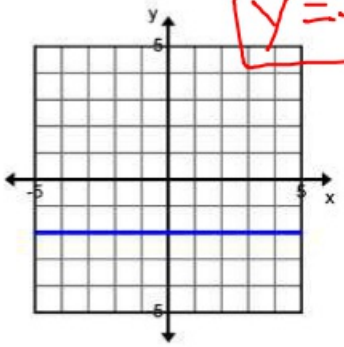
B.



$y = \frac{1}{2}x - 2$

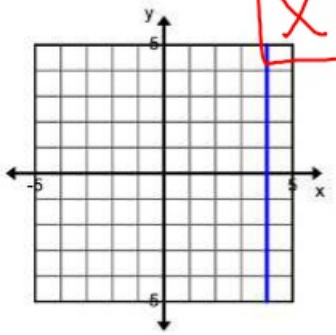
$\frac{1}{2}$

C.



$y = -2$

D.

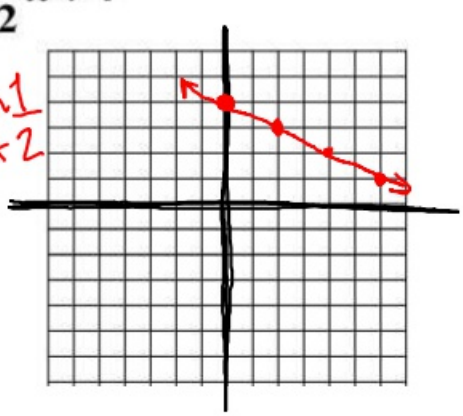


$x = 4$

Ex 5: Graph each equation.

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

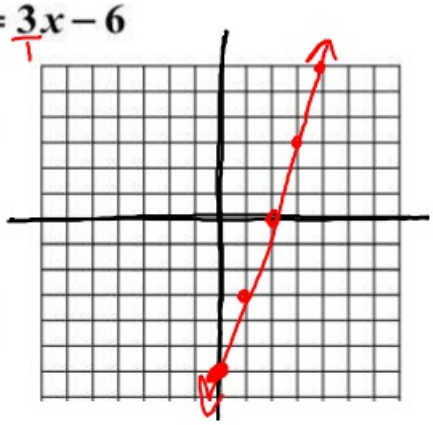
$-\frac{1}{2}$ → down 1 Right 2



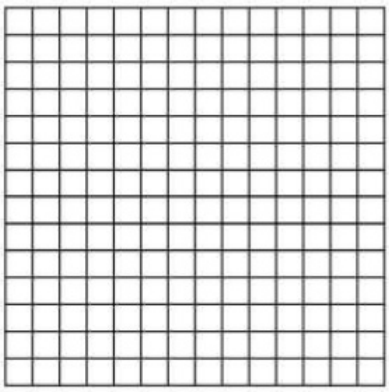
B. $y = \frac{3}{1}x - 6$

$3 \rightarrow \frac{3}{1}$

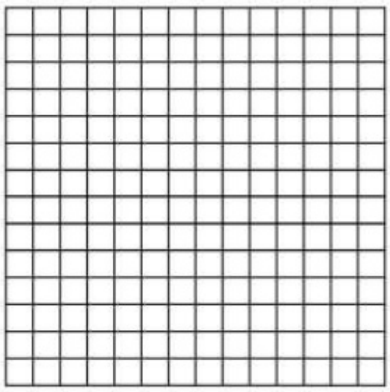
Up 3 Right



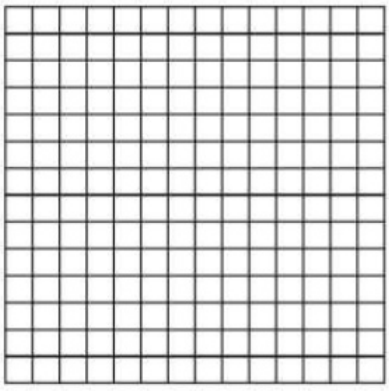
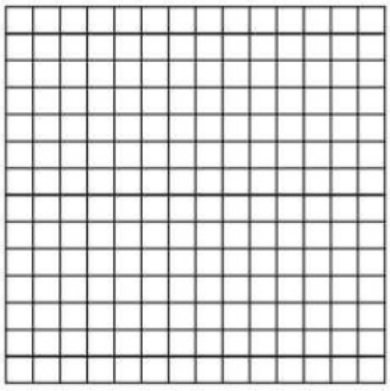
C. $y = -2x + 3$



D. $y = \frac{2}{3}x - 5$



E. $y = -2x$



F. $y = x$