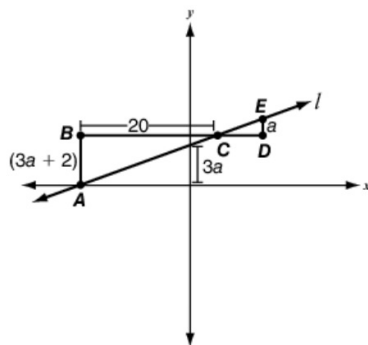**4.** Use the graph to answer the questions below.

Part A. If triangles ABC and EDC are similar and $CD = 5$, what is the slope of line l? Show your work.

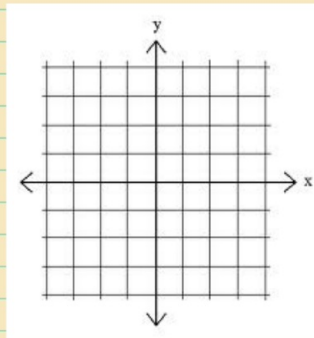Part B. What is the equation of line l if it intercepts the y-axis at $3a$? Show your work.

Pink lines = Similiar

blue lines = Similiar

• Make a proportion

$$\frac{P}{P} = \frac{B}{B}$$

• Solve proportion

Solve

Graph the line with the given slope that passes through the given point.

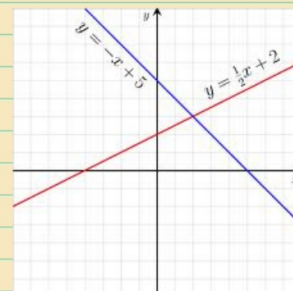Slope: = 1/4; (0,0)

4-4 Linear Functions:
Vocabulary:

Defination

1.) Slope-intercept form:

$$y = mx + b$$
m = slope
b = y ~ intercept

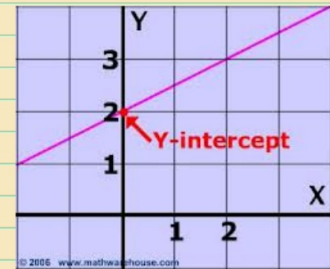**2.) Linear Function:**

is a function whose graph is a line
ex.)

Vocabulary cont:

3.) y - intercept	is the y - coordinate of the point where the line crosses the y axis
	$y = mx + b$
4.) x- intercept	is the x-coordinate of the point where the line crosses the x-axis. It occurs when $y = 0$

Skill check:

solve for y:

$3x + y = 10$

Example 1
Identifying slopes &
y-intercepts
Rules

1.) check to see if you need to rearrange $y = mx + b$	1.) $y = -4x - 2$

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

Slope = 4/~1, ~4/1 do not write as ~4/~
Clever = ~4
y ~ int. = ~2 (sign in front carries)

2.) Find the slope
   m is slope

2.) $y - 5 = 3/2x$

  $y = 3/2x + 5$

Slope = 3/2 (rise 3 over 2)
 y ~ int = 5

3.) Find the y~int
   b is y - int

3.) $y = 3x - 7$ $-7 + ^-7$

Slope = 3, 3/1, -3/-1
y - int = -7

Practice:
  rules   Solve

Find the slope.

1.) $y = -3x + 10$
Slope = -3/1, 3/-1, -3 (down 3 over 1)
y - int = 10 (line crosses on the y- axis)

Find y - int

2.) $-5y + x = 25$

1.) not written in
slope-int form!!!
solve or y

$y = x/5 - 5$
Slope: 1/5

y - int = -5

Example 2
Graphing using slope intercept form:

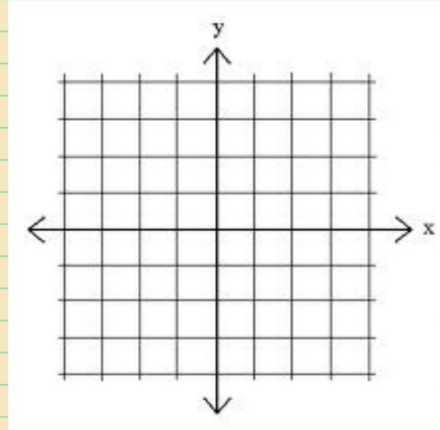| steps	Solve
1.) Do I need to re-write equation?	1.) y = -2x + 3
2.) Slope =	
3.) y-int=	
4.) Plot the y-int on graph	
5.) Use the slope to guide to the second point	

Using a graphing calculator to check:
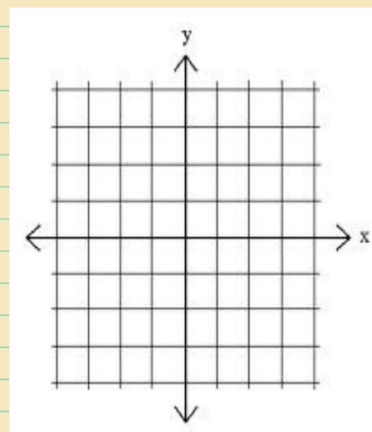
Practice:

Steps	Solve:

1.) y = 2/3x - 2
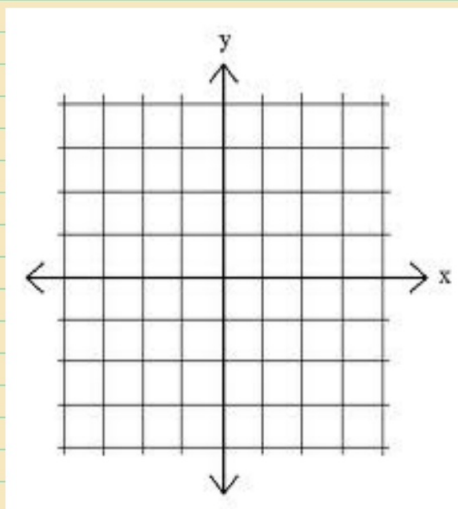
Practice:

Steps	Solve

1.) y = -x - 1

Practice:

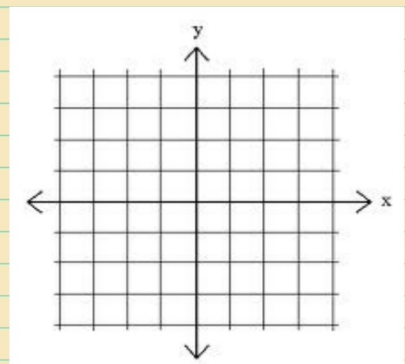| Steps	Solve
	1.) $y = 3/2x - 5$
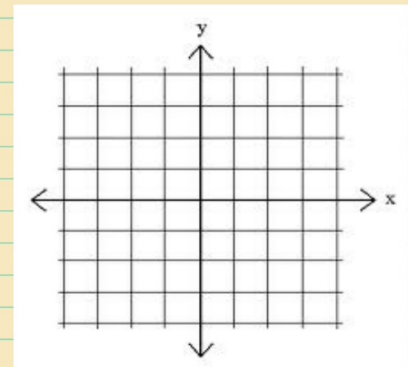
Practice:

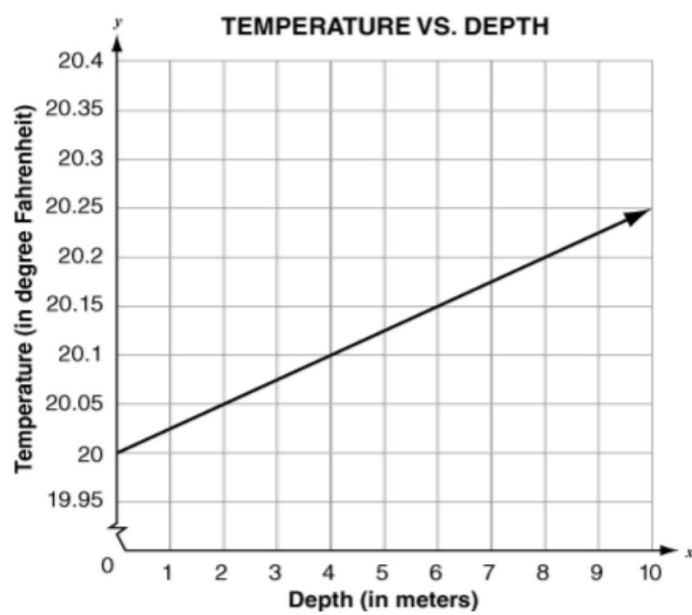| Steps	Solve
	1.) $2y + 3x = -10$

The graph shows the temperature at different depths below the ground recorded by a mining company.

TEMPERATURE VS. DEPTH

What does the *y*-intercept represent in terms of the given context?