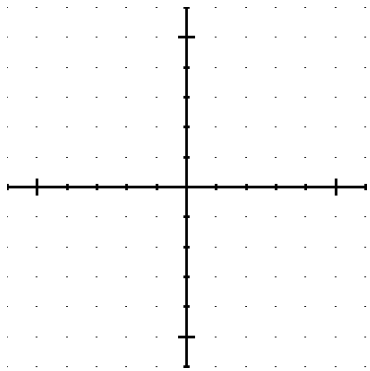


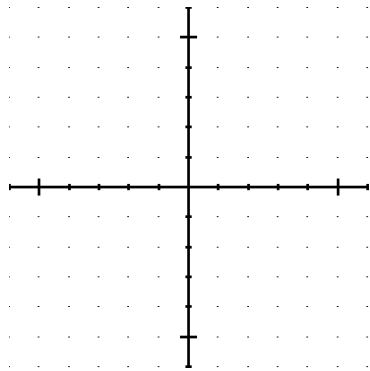
Graphing Equations

Graph the following equations using any technique.

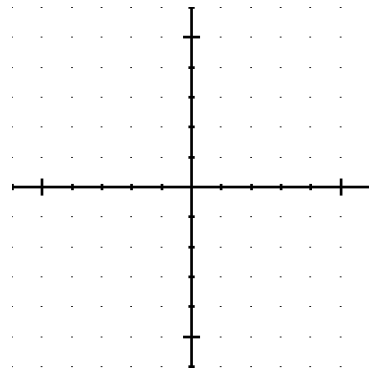
1) $y = 2x - 4$



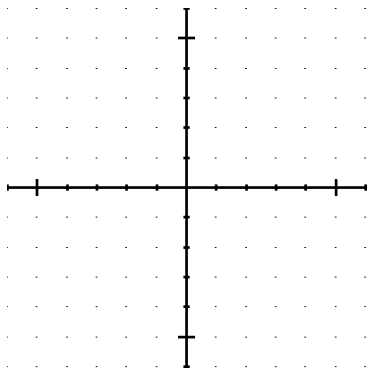
2) $y = -\frac{2}{3}x + 4$



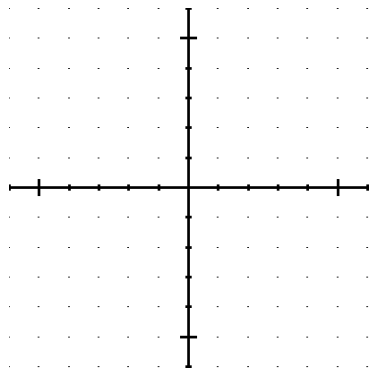
3) $y = 5x$



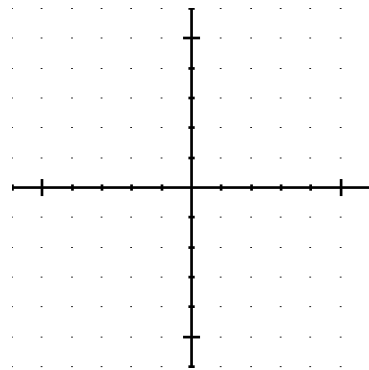
4) $y = 4$



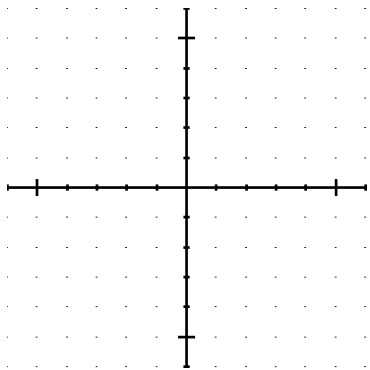
5) $3x - 2y = 6$



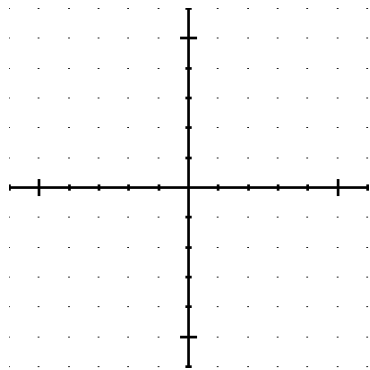
6) $x = 0$



7) $x + 2y + 4 = 0$



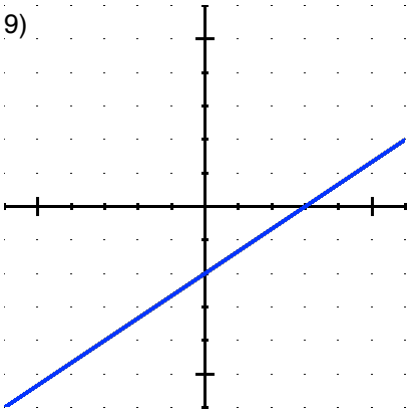
8) $4x + 5y + 20 = 0$



x-intercepts and y-intercepts

Find the x and y-intercepts - write your answers as **POINTS**.

9)



x-int: _____

y-int: _____

10) $y = 3x - 6$

x-int: _____

y-int: _____

11) $5x - 2y = 15$

x-int: _____

y-int: _____

Review Questions!

Solve for y

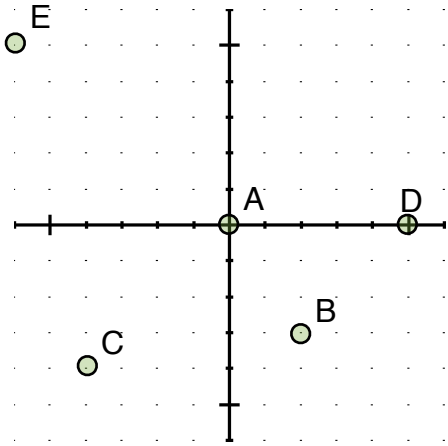
12) $5y = -10x + 20$

13) $3x + 2y = 6$

14) $2x - \frac{1}{3}y + 1 = 0$

Slope

In the picture below, find the slopes between the indicated points:



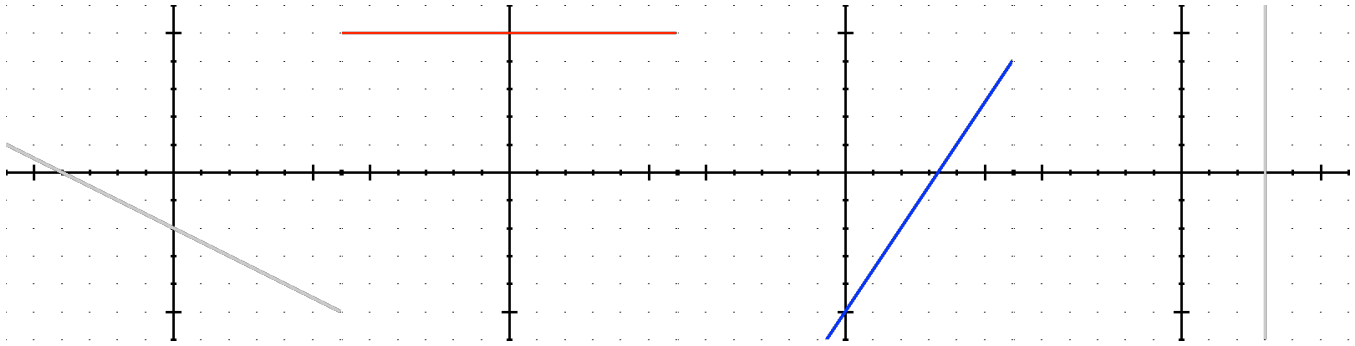
15) slope between A and B: _____

16) slope between C and A: _____

17) slope between B and D: _____

18) slope between A and D: _____

Find the indicated slopes for the picture below (I'm not asking for the **TYPE**):



19) slope = _____

20) slope = _____

21) slope = _____

22) slope = _____

Find the slopes between these points:

23) (1, 5) and (2, 6)

24) (8, -1) and (6, 3)

25) (5, -2) and (-2, -7)

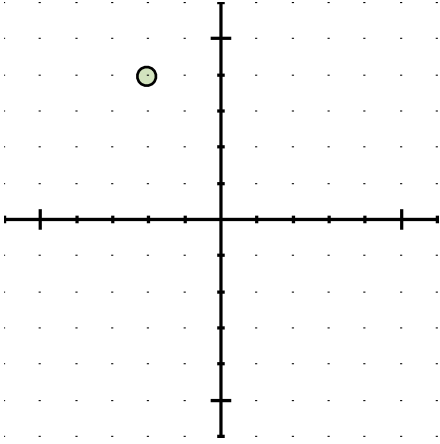
Find the slopes of these equations

26) $y = \frac{1}{2}x - 4$

27) $5x - 4y = 20$

(Hint: Make a graph OR solve for y)

28) You once drew a line with a slope of $-\frac{1}{2}$... but I erased everything but one point! Redraw the line!



29) What is the **rate of change** in this table? Then use the rate of change to fill in the last box.

Age (yrs)	5	7	9	11	12
Height (in)	50	56	62	68	

rate of change: _____

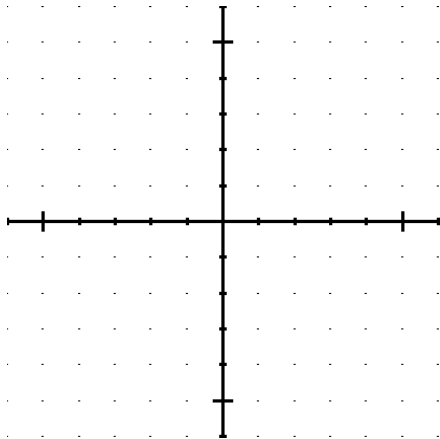
30) The slope of a graph is $\frac{3}{4}$. The slope is a **rate of change** because as the x-values increase by _____, the y-values increase by _____. Use that information to finish this table.

x	y
-5	
3	8
	11
15	

31) Solve for x given that the slope of a line is 4 and two points on the line are (x, 7) and (-10, 15).

Points and Quadrants

Plot the following points and state their location (quadrant or which axis)



32) A: (2, -4) Location: _____

33) B: (-3, 0) Location: _____

34) C: (5, 2) Location: _____

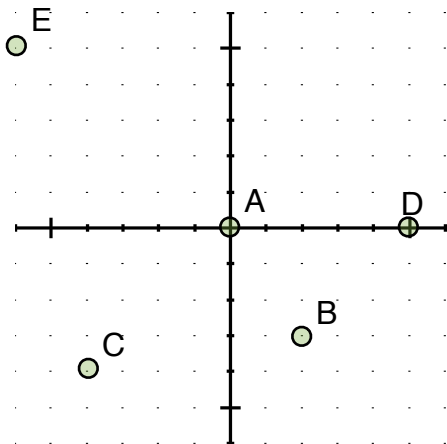
35) D: (-1, -2) Location: _____

36) E: (0, 1) Location: _____

37) F: (-5, 5) Location: _____

38) In which quadrant(s) are all the x-values greater than 0? _____

Write down the **coordinates** of these points



39) A: _____

40) B: _____

41) C: _____

42) D: _____

43) E: _____

44) Which of the following is a y-intercept (the other three cannot be y-intercepts)?

a) (2, 0)

b) (0, 5)

c) (4, 4)

d) $\frac{1}{2}$

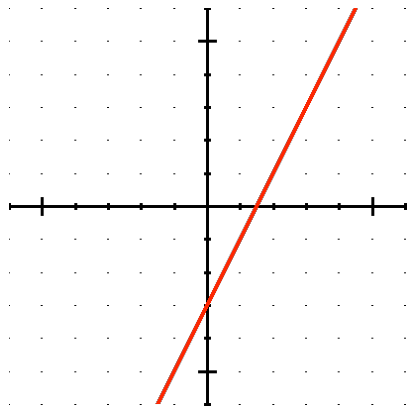
45) Lines are said to be parallel if they have the same slope. Determine if the first line is parallel to the line passing through the given points.

Line 1: $y = 2x - 5$

Line 2: passes through (0, 3) and (-2, -1)

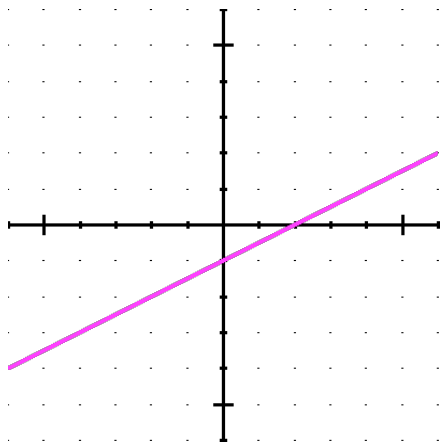
Points (Continued)

46) Write down the coordinates of 6 points that are solutions to the line below:



- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____

Use the graph below to finish these solutions



- 47) (0, ____)
- 48) (____, 1)
- 49) (-2, ____)
- 50) (____, -4)
- 51) (2, ____)

52) Which of the following is a solution to $5x - 6y = 30$?

- a) (0, 5)
- b) (-6, 0)
- c) (12, 5)
- d) (6, 5)

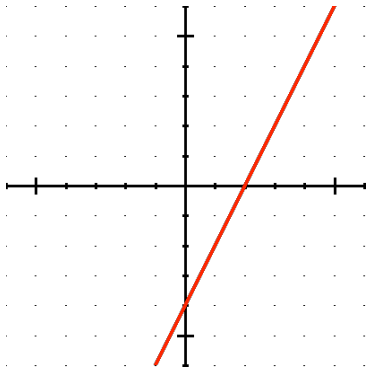
53) How many solutions does the equation $y = 3x - 1$ have?

Skill Review

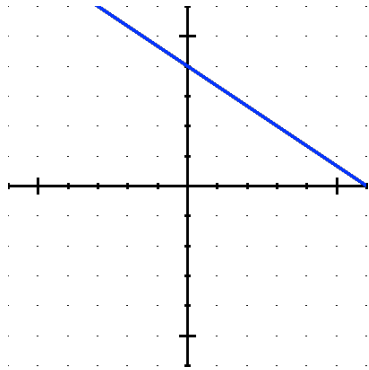
What to do...	How to...
Find an x-intercept	1) Plug in 0 for y and solve for x 2) Look where a graph crosses the x-axis
Find a y-intercept	1) Plug in 0 for x and solve for y 2) Look where a graph crosses the y-axis 3) Identify 'b' in slope-intercept form
Find a slope	1) $\frac{\text{rise}}{\text{run}}$ (counting between two points on a line - do vertical than horizontal, making a triangle) 2) $\frac{\text{Change in } y}{\text{Change in } x}$ 3) $\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$ 4) Identify 'm' in slope-intercept form
Graph an Equation	1) Find the intercepts and plot them 2) Find solutions by plugging in random x-values and solving for y - then plotting the points 3) Using the y-intercept and slope you recognize in the slope-intercept form of the equation ($y = mx + b$)
Find rate of change	Find the slope!
Find a solution	Find a point (x,y) that makes both sides of an equation equal
Plot a point	For the point (x, y), start at the origin and count horizontally x units, and then vertically y units.
Coordinates	Both the x and y information i.e. (x,y) not just x
Quadrant	One of the four regions that the Cartesian Grid is cut into by the x and y-axis. The upper right hand region is called Quadrant I, The upper left hand region is called Quadrant II, etc.

Answers!

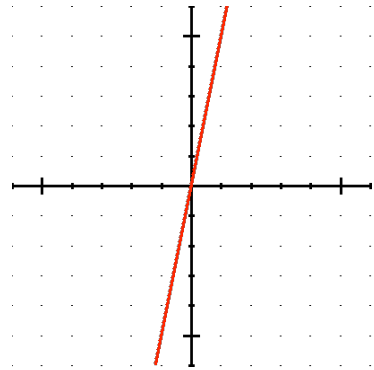
1) $y = 2x - 4$



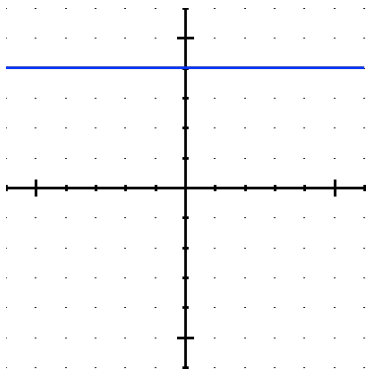
2) $y = -\frac{2}{3}x + 4$



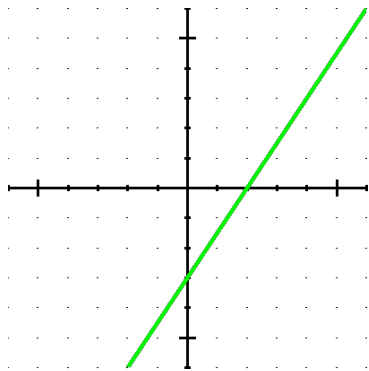
3) $y = 5x$



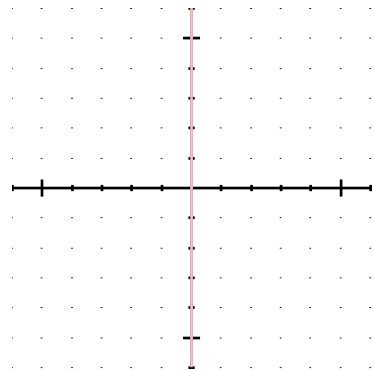
4) $y = 4$



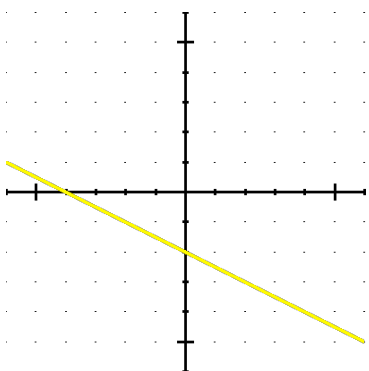
5) $3x - 2y = 6$



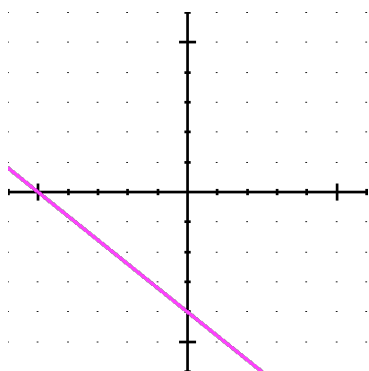
6) $x = 0$



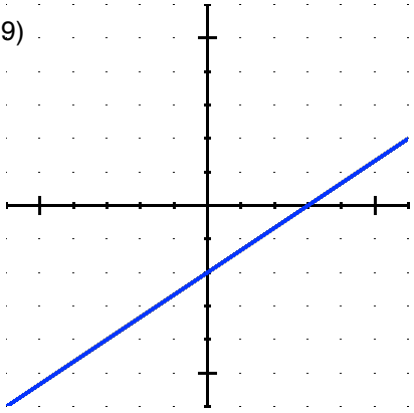
7) $x + 2y + 4 = 0$



8) $4x + 5y + 20 = 0$



9)



x-int: (3, 0)

y-int: (0, -2)

10) $y = 3x - 6$

x-int: (2, 0)

y-int: (0 -6)

11) $5x - 2y = 15$

x-int: (3, 0)

y-int: $\left(0, -\frac{15}{2}\right)$

12) $5y = -10x + 20$

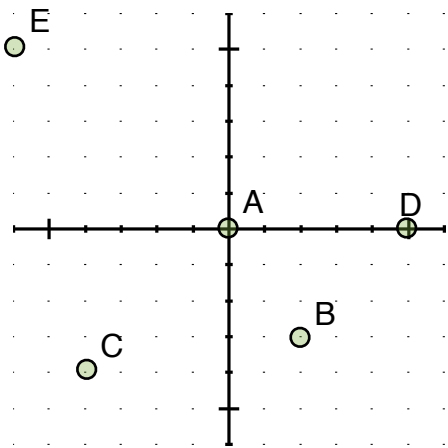
$y = -2x + 4$

13) $3x + 2y = 6$

$y = -\frac{3}{2}x + 3$

14) $2x - \frac{1}{3}y + 1 = 0$

$y = 6x + 3$

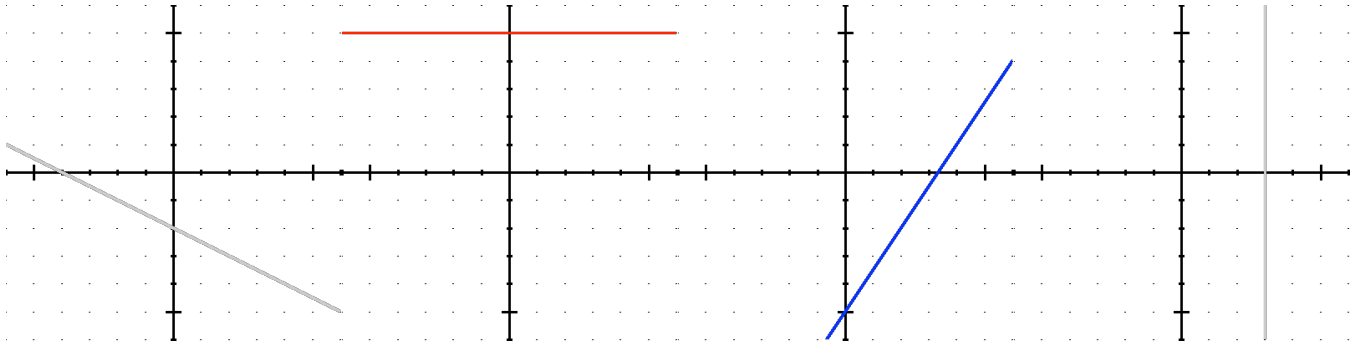


15) slope between A and B: $-\frac{3}{2}$

16) slope between C and A: **1**

17) slope between B and D: **1**

18) slope between A and D: **0**



19) slope = $-\frac{1}{2}$

20) slope = 0

21) slope = $\frac{3}{2}$

22) slope = Undefined

23) (1, 5) and (2, 6)

24) (8, -1) and (6, 3)

25) (5, -2) and (-2, -7)

slope = 1

slope = -2

slope = $\frac{5}{7}$

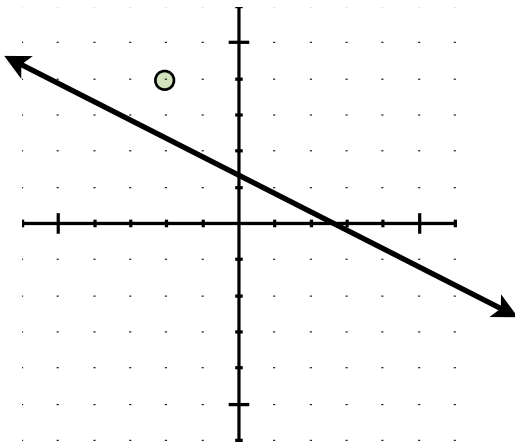
26) $y = \frac{1}{2}x - 4$

27) $5x - 4y = 20$

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

slope = $\frac{5}{4}$

28)



29)

Age (yrs)	5	7	9	11	12
Height (in)	50	56	62	68	71

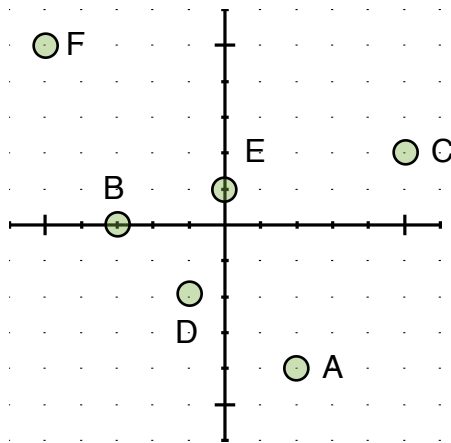
rate of change: **3 inches per year**

30) The slope of a graph is $\frac{3}{4}$. The slope is a **rate of change** because as the x-values increase by **4**, the y-values increase by **3**. Use that information to finish this table.

x	y
-5	2
3	8
7	11
15	17

31) Solve for x given that the slope of a line is 4 and two points on the line are (x, 7) and (-10, 15).

$$x = -12$$



32) A: (2, -4) Location: **Quadrant IV**

33) B: (-3, 0) Location: **x-axis**

34) C: (5, 2) Location: **Quadrant I**

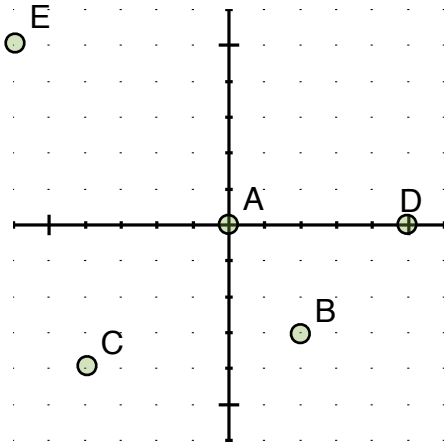
35) D: (-1, -2) Location: **Quadrant III**

36) E: (0, 1) Location: **y-axis**

37) F: (-5, 5) Location: **Quadrant II**

38) In which quadrant(s) are all the x-values greater than 0? **Quadrants I and IV**

Write down the **coordinates** of these points



- 39) A: **(0, 0)**
- 40) B: **(2, -3)**
- 41) C: **(-4, -4)**
- 42) D: **(5, 0)**
- 43) E: **(-6, 5)**

44) Which of the following is a y-intercept (the other three cannot be y-intercepts)?

- a) (2, 0)
- b) (0, 5)**
- c) (4, 4)
- d) $\frac{1}{2}$

45) Lines are said to be parallel if they have the same slope. Determine if the first line is parallel to the line passing through the given points.

Line 1: $y = 2x - 5$

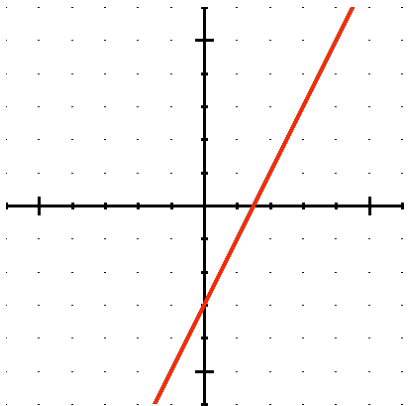
Line 2: passes through (0, 3) and (-2, -1)

slope = 2

slope = 2

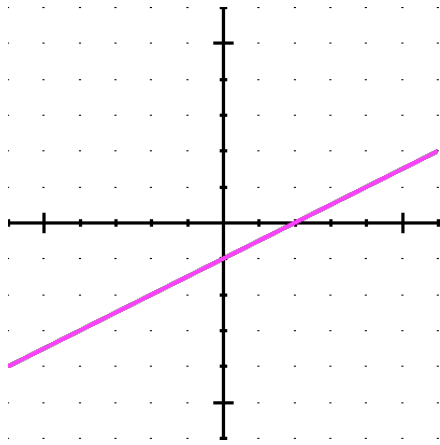
Yes, they are parallel

46) Write down the coordinates of 6 points that are solutions to the line below:



- a) **(-1, -5)**
- b) **(0, -3)**
- c) **(1, -1)**
- d) **(2, 1)**
- e) **(3, 3)**
- f) **(4, 5)**

Use the graph below to finish these solutions



47) (0, -1)

48) (4, 1)

49) (-2, -2)

50) (-6, -4)

51) (2, 0)

52) Which of the following is a solution to $5x - 6y = 30$?

a) (0, 5)

b) (-6, 0)

c) (12, 5)

d) (6, 5)

53) How many solutions does the equation $y = 3x - 1$ have?

Infinitely Many!