

Day 28

2/16/18

3-6 Continued...

Standard form of a line is  
 $AX + BY = C$

you can find the x-intercept by setting  $y = 0$ , and find the y-intercept by setting  $x = 0$ , and then graph the line using those 2 intercepts.

Examples: Graph each line using intercepts.

①  $3x - y = 12$   
x-int:  $3x - 0 = 12$   
 $\frac{3x}{3} = \frac{12}{3}$

$x = 4$  x-int:  $(4, 0)$

y-int:  $3 \cdot 0 - y = 12$   
 $0 - y = 12$   
 $-\frac{1}{1}y = \frac{12}{1}$   $y = -12$   
y-int:  $(0, -12)$

②  $12x - 3y = -6$   
x-int:  $12x - 3 \cdot 0 = -6$   
 $\frac{12x}{12} = \frac{-6}{12}$   $x = -\frac{1}{2}$   
x-int:  $(-\frac{1}{2}, 0)$

y-int:  $12 \cdot 0 - 3y = -6$   
 $0 - 3y = -6$   $(0, 2)$   
 $-\frac{3y}{3} = \frac{-6}{3}$   $y = 2$

③  $\frac{1}{2}x + \frac{1}{3}y = 3$

x-int:

$\frac{1}{2}x + \frac{1}{3} \cdot 0 = 3$

~~$\frac{1}{2}x = 3 \cdot \frac{2}{1}$~~

$x = 6$

x-int:

$(6, 0)$

y-int:

$\frac{1}{2} \cdot 0 + \frac{1}{3}y = 3$

$0 + \frac{1}{3}y = 3$

~~$\frac{1}{3}y = 3 \cdot \frac{3}{1}$~~

$y = 9$

y-int:  $(0, 9)$

④  $0.2x + 0.3y = 1.8$

Point-Slope Form is good to use if (1) you know the slope ( $m$ ) and any point on the line.

(2) your given 2 points

$$y - y_1 = m(x - x_1)$$

Write an equation of the line with the given slope that contains the given point.

(1) F(3, -6) slope =  $\frac{1}{3}$

$$y - (-6) = \frac{1}{3}(x - 3)$$

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

$$y = \frac{1}{3}x - 7$$

(2) B(-4, 1) slope =  $-\frac{1}{2}$

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

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

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

(3) A(5, 2)  $m = 7$

$$y - 2 = 7(x - 5)$$

$$y - 2 = 7x - 35$$

$$y = 7x - 33$$

1st: Find the slope  $m = \frac{y_2 - y_1}{x_2 - x_1}$   
2nd: choose 1 OF points

Write an equation of the line containing the given points.

④ A(2,7) B(3,4)

$$m = \frac{7-4}{2-3} = \frac{3}{-1} = -3$$

$$y - y_1 = m(x - x_1)$$

$$y - 7 = -3(x - 2)$$

$$y - 7 = -3x + 6$$

$$y = -3x + 13$$

⑤ P(-1,3) Q(0,4)

$$m = \frac{3-4}{-1-0} = \frac{-1}{-1} = 1$$

$$y - 4 = 1(x - 0)$$

$$y - 4 = 1x$$

$$y = 1x + 4$$

⑥ D(7,-4) E(-5,2)

Write equations for (a) the horizontal line and (b) the vertical line that contain the given point.

33. Z(2, -11)

34. D(0, 2)

35. R(-4, -4)

36. F(-1, 8)

a) H:  $y = -11$

b) V:  $x = 2$

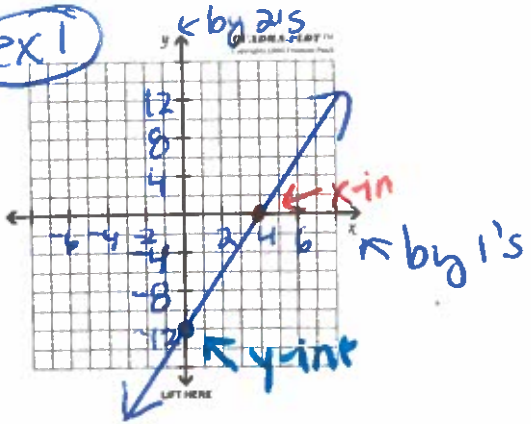
a)  $y = 2$

b)  $x = 0$

a)  $y = -4$

b)  $x = -4$

ex 1



ex 2

