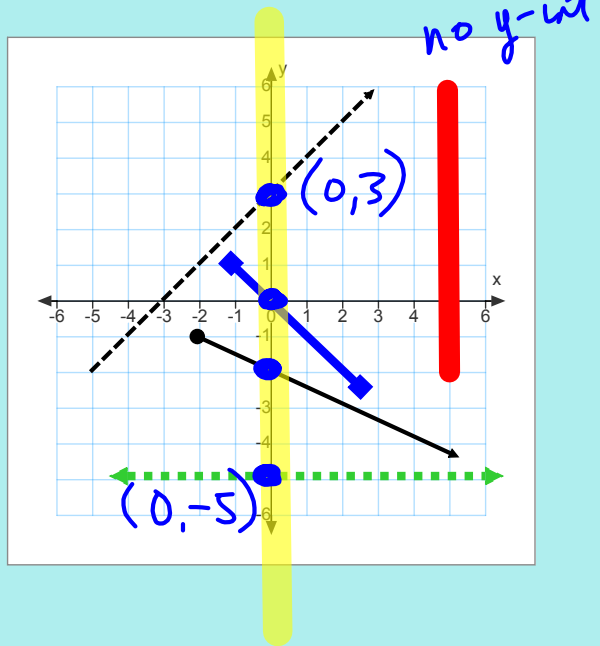


The y-intercept is where a line touches the y-axis

What is the x-value for each of these crossing points?

$x = \bigcirc$

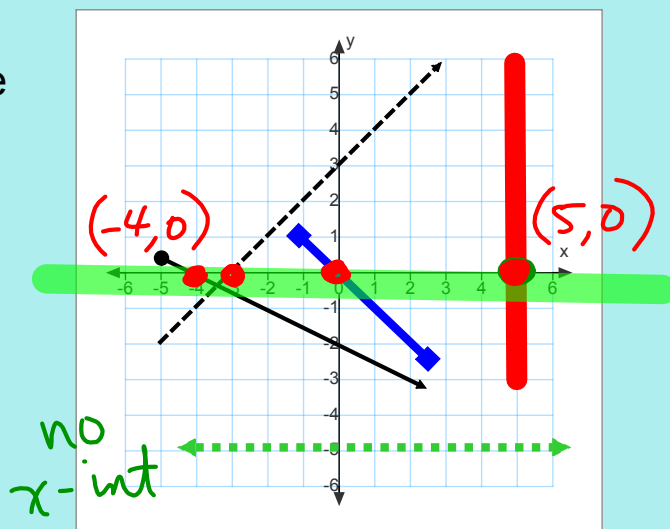


Apr 5-6:26 PM

The x-intercept is where a line touches the x-axis

What is the y-value for each of these crossing points?

$y = \bigcirc$



Apr 5-6:26 PM

Graphing a Line Using Intercepts

Nov. 10/2015

Definitions:

- (1) The y-intercept is the y-coordinate of the point where a line crosses the y-axis.

In an equation, set $x = 0$ and solve for y .

- (2) The x-intercept is the x-coordinate of the point where a line crosses the x-axis.

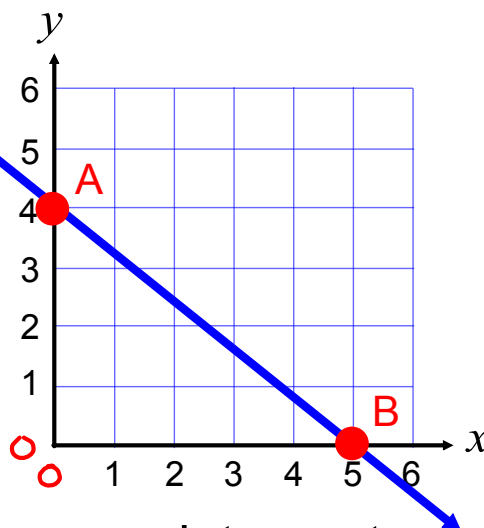
In an equation, set $y = 0$ and solve for x .

Nov 10-8:53 AM

Graphically:

y-interceptpoint: $A(0,4)$

$$y = 4$$

x-interceptpoint: $B(5,0)$

$$x = 5$$

Nov 10-9:12 AM

Ex. Consider the line $2x - 3y + 12 = 0$

(a) What form is it in? standard form

(b) Determine the x-intercept and y-intercept.

(set $y=0$)

(set $x=0$)

x-int

$$2x - 3(0) + 12 = 0$$

$$2x + 12 = 0$$

$$\frac{2x}{2} = -\frac{12}{2}$$

$$x = -6$$

y-int

$$2(0) - 3y + 12 = 0$$

$$-3y = -12$$

$$\frac{-3y}{-3} = \frac{-12}{-3}$$

$$y = 4$$

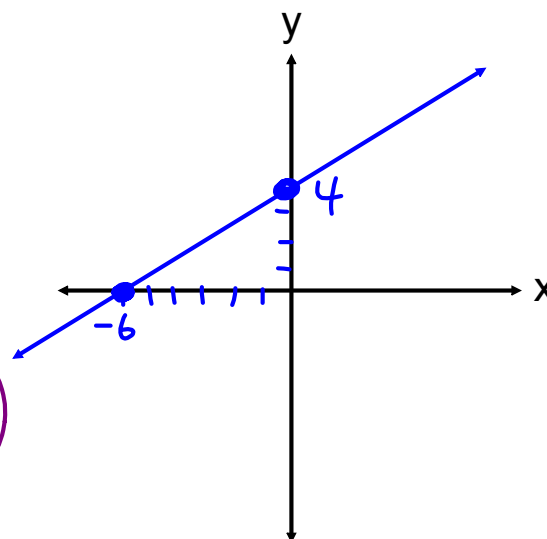
(c) Sketch the graph.

Apr 5-6:28 PM

Ex. Consider the line $2x - 3y + 12 = 0$

(b) $x\text{-int} = -6$ $y\text{-int} = 4$

(c) Sketch the graph.



A sketch does not require graph paper, but use a ruler for straight lines.

Apr 5-6:28 PM

for x-intercept, set $y=0$

$$2x - 3y + 12 = 0$$

$$2x - 3(0) + 12 = 0$$

$$2x = -12$$

$$x = -6$$

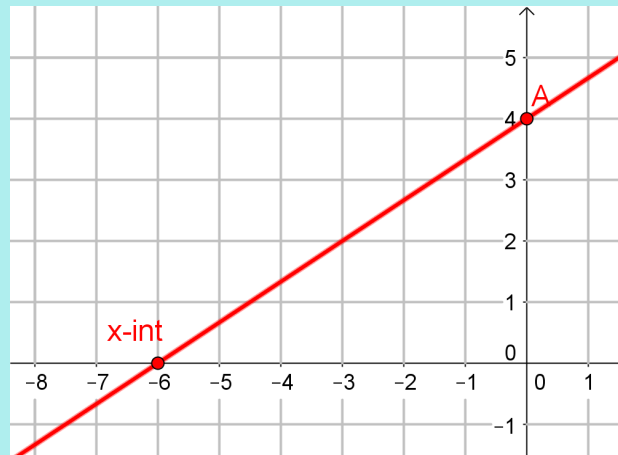
for y-intercept, set $x=0$

$$2x - 3y + 12 = 0$$

$$2(0) - 3y + 12 = 0$$

$$-3y = -12$$

$$y = 4$$



Nov 10-9:41 AM

Ex.1 Sketch the line with y-intercept of 5 and x-intercept of -2, then determine the equation.

Ex.2 Sketch the line with x-intercept of 1 and no y-intercept, then determine the equation.

Ex.3 Sketch the line with y-intercept of -3 and no x-intercept, then determine the equation.

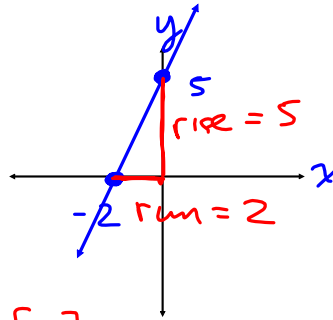
Ex.4 Mariam pays \$2 per candy bar and \$3 per bag of fuzzy peaches. She has \$18 to spend. Determine the equation which models how much of each treat she can afford if she spends all of her money, then sketch the graph.

Apr 5-6:43 PM

Ex.1 Sketch the line with y-intercept of 5 and x-intercept of -2, then determine the equation.

$$m = \frac{5}{2}$$

$$b = 5$$



$$\boxed{y = \frac{5}{2}x + 5} \quad [\times 2]$$

$$2y = 2\left(\frac{5}{2}x\right) + 2(5)$$

$$2y = 5x + 10$$

$$0 = 5x - 2y + 10$$

$$\boxed{5x - 2y + 10 = 0}$$

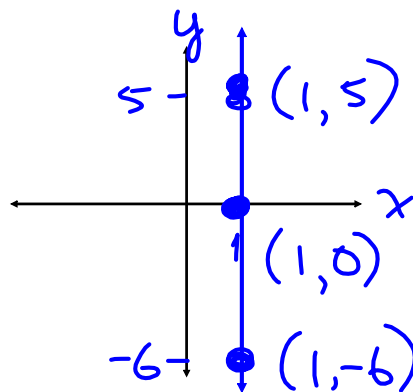
Apr 5-6:43 PM

Ex.2 Sketch the line with x-intercept of 1 and no y-intercept, then determine the equation.

$$\text{Equation: } x = 1$$

y-int: none

slope: undefined



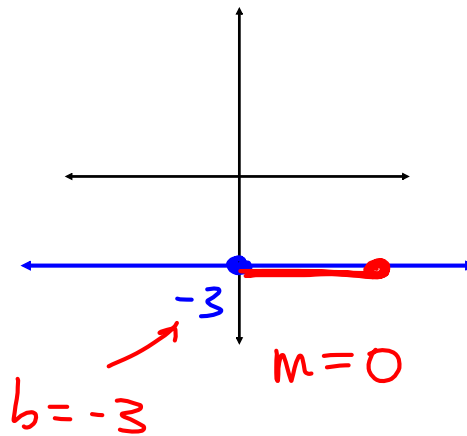
Apr 5-6:43 PM

Ex.3 Sketch the line with y-intercept of -3 and no x-intercept, then determine the equation.

$$y = mx + b$$

$$y = 0x + (-3)$$

$$\boxed{y = -3}$$



Apr 5-6:43 PM

Ex.4 Mariam pays \$2 per candy bar and \$3 per bag of fuzzy peaches. She has \$18 to spend. Determine the equation which models how much of each treat she can afford if she spends all of her money, then sketch the graph.

$$2C + 3P = 18$$

total cost of candy bars cost of peaches

$$2x + 3y = 18$$

x-int
set $y=0$

$$2x + 3(0) = 18$$

$$2x = 18$$

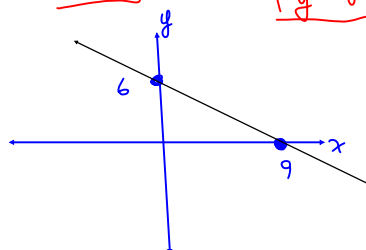
$$\boxed{x = 9}$$

y-int
set $x=0$

$$2(0) + 3y = 18$$

$$3y = 18$$

$$\boxed{y = 6}$$



Apr 5-6:43 PM

Assigned Work:

Complete Handout, and
p.319 # 1-5 (odd letters), 6-9, 11, 12, 15

15 WS#4
5.
7
12
11
9

Apr 5-7:09 PM

5. (a) x-int y-int
 6 5
 $P_1(6, 0)$ $P_2(0, 5)$
 x_1, y_1 x_2, y_2
 slope formula: $m = \frac{\text{rise}}{\text{run}}$
 (need 2 points) $= \frac{\Delta y}{\Delta x}$

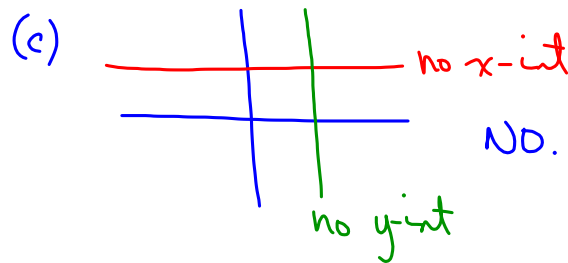
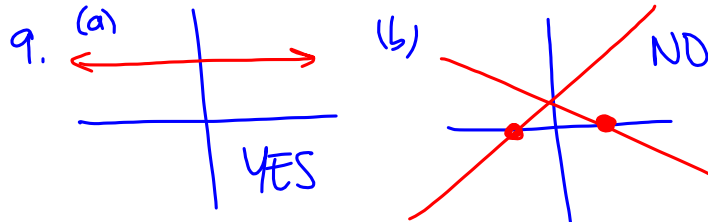
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Nov 11-9:21 AM

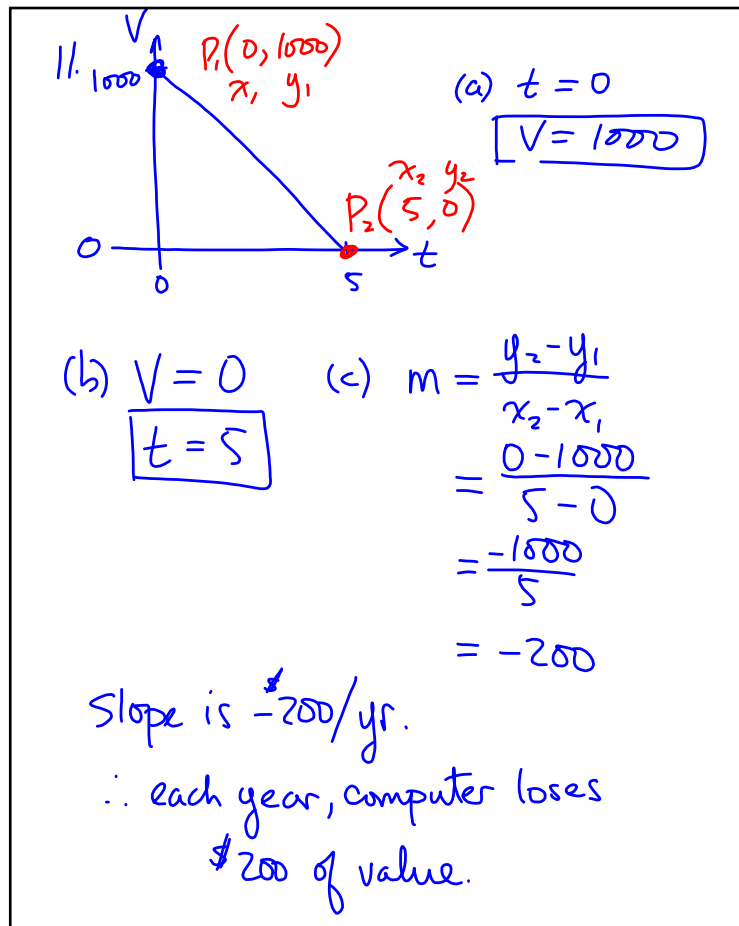
7. $x + 4y = -4$

TOV: need $y =$ _____

3 points: same as TOV



Nov 11-9:24 AM



Nov 11-9:30 AM