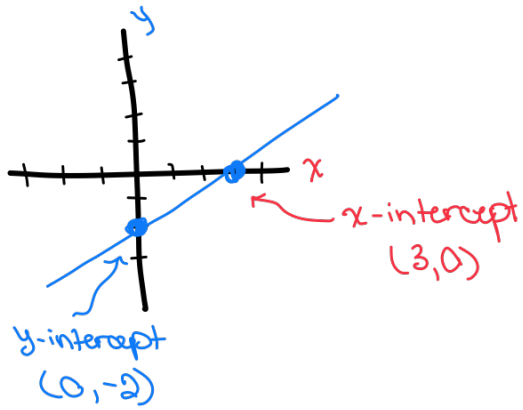
Intro to College Math: Chapter 3.3
Intercepts of Lines

* x-intercept — the point where the graph crosses the x-axis. (the y-coordinate is 0 at this point.)

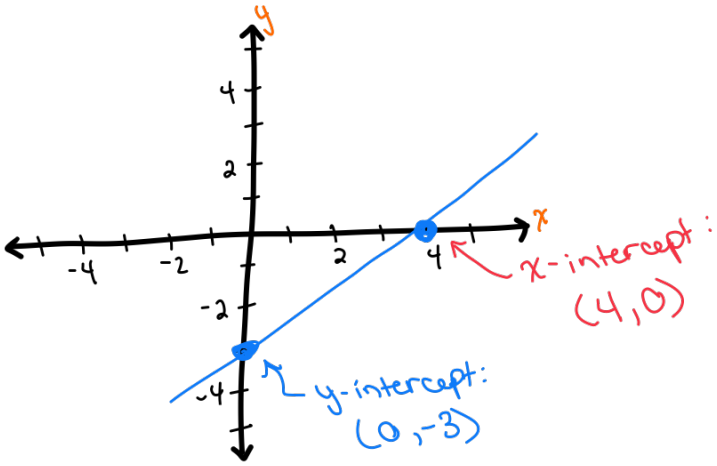
(x, 0) ex) (7, 0)

* y-intercept — the point where the graph crosses the y axis. (the x-coordinate is 0 at this point.)

(0, y) ex.) (0, 5)



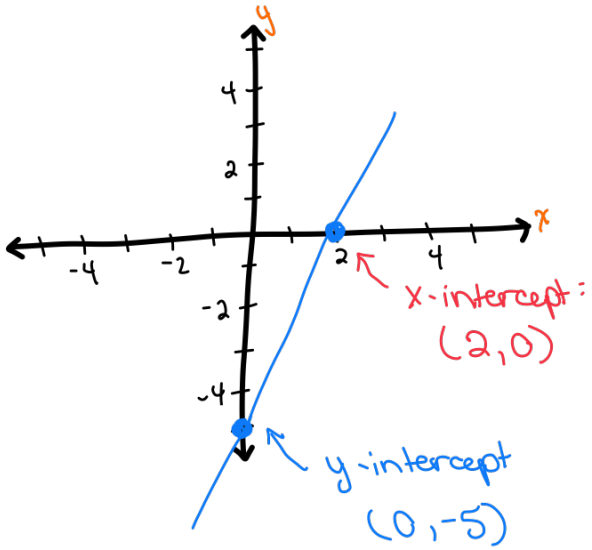
1. From the graph below, find the x and y-intercepts for the line.



* The x-intercept is where the graph crosses the x-axis (line going side-to-side)

* The y-intercept is where the graph crosses the y-axis (line going up + down)

2. Find the x and y-intercepts of the line.



* The x-intercept is where the graph crosses the x-axis (line going side-to-side)

* The y-intercept is where the graph crosses the y-axis (line going up & down)

3. Find the x and y-intercepts of the line.

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

x-intercept $(x, 0)$

* replace y with 0. Then solve for x.

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

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

$-2 \quad -2$

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

$\frac{1}{2} \quad \frac{1}{2}$

$-4 = x$

$(-4, 0)$ x-intercept

y-intercept $(0, y)$

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

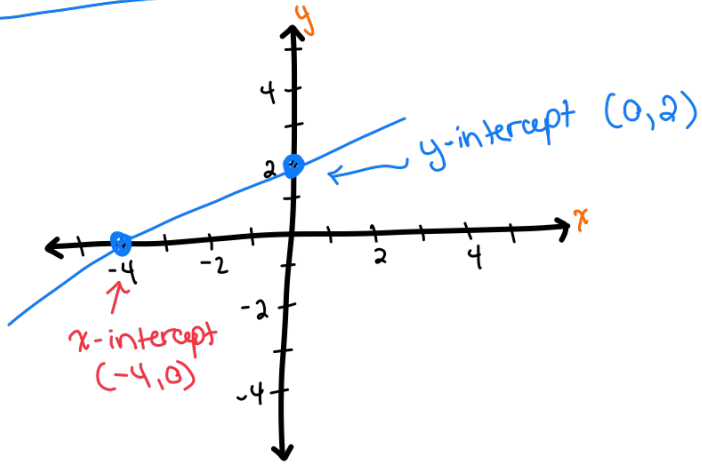
* Replace x with 0. Then solve for y.

$y = \frac{1}{2}(0) + 2$

$y = 0 + 2$

$y = 2$

$(0, 2)$ y-intercept



4. Find the x and y-intercepts of the line.

$-4x+y=4$

x-intercept $(x, 0)$

$-4x+y=4$

$-4x+0=4$

$-4x=4$

$\frac{-4x}{-4}=\frac{4}{-4}$

$x=-1$

$(-1,0)$ x-intercept

*Replace y with 0. Then solve for x.

y-intercept $(0, y)$

$-4x+y=4$

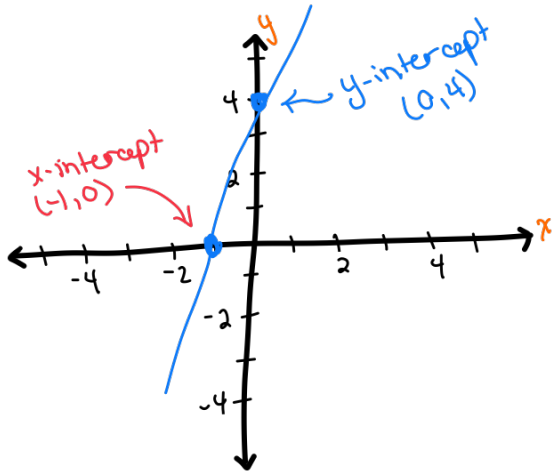
$-4(0)+y=4$

$0+y=4$

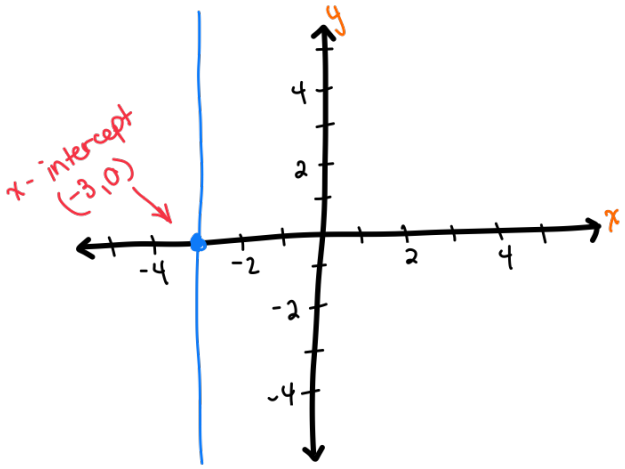
$y=4$

$(0,4)$

*Replace x with 0. Then solve for y.



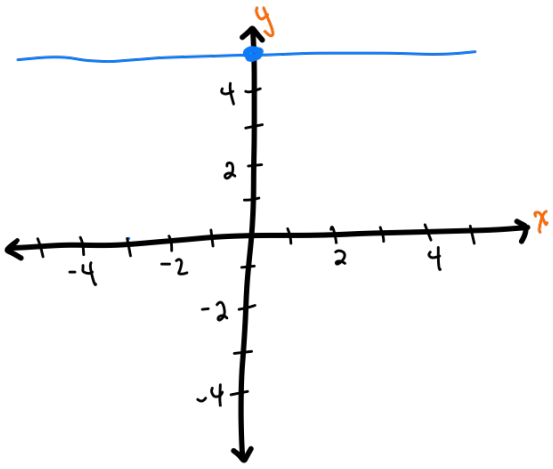
5. Graph the vertical line x= -3. Then name it's intercept.



* To graph vertical line:
  - Click on the number x = on the x-axis.
  - Then either go straight up or down & click another point.
  - Line should be going straight up & down

x-intercept = (-3, 0)

6. Graph the horizontal line y = 5. Then name it's intercept.



* To graph horizontal line:
  - Click on the number y = on the y-axis.
  - Then either go straight left or right & click another point.
  - Line should be going straight side-to-side