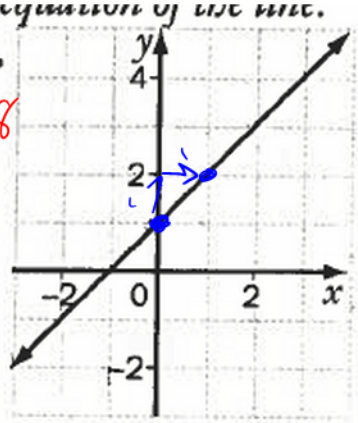
8.4 Slope Intercept Form ($y = mx + b$) May 17, 2016

49. pg 428



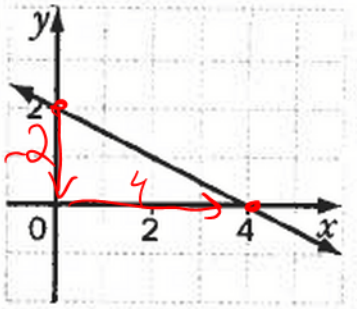
y-int: $(0, 1)$ $b = 1$

$m = \frac{1}{1} = 1$

$y = mx + b$

$y = x + 1$

51.



y-int: $(0, \boxed{2})$ (b)

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

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

53. a) an equation is $y = 2x + b$. Find "b" if the line passes $(4, 2)$

$2 = 2(4) + b$

$-8 \quad -8$

$-6 = b$

$\therefore y = 2x - 6$

54 b) $y = mx + 3$. Find "m" if the line passes $(-4, 5)$

$-3 \quad -3$

$5 = m(-4) + 3$

$\frac{2}{-4} = \frac{-4m}{-4}$

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

$\therefore y = \frac{-1}{2}x + 3$

on boards 53 d, 54 c

55. Explain why these lines belong to a family → they share a characteristic or a property
- slope
- y-int
- x-int

① $y = \frac{5}{2}x - 1$

② $5x - 2y - 2 = 0$

$-5x \quad +2$

$-2y = -5x + 2$

$\frac{-2y}{-2} = \frac{-5x}{-2} + \frac{2}{-2}$

$y = \frac{5}{2}x - 1$

③ $2x + y + 1 = 0$

$-2x \quad -1$

$y = -2x - 1$

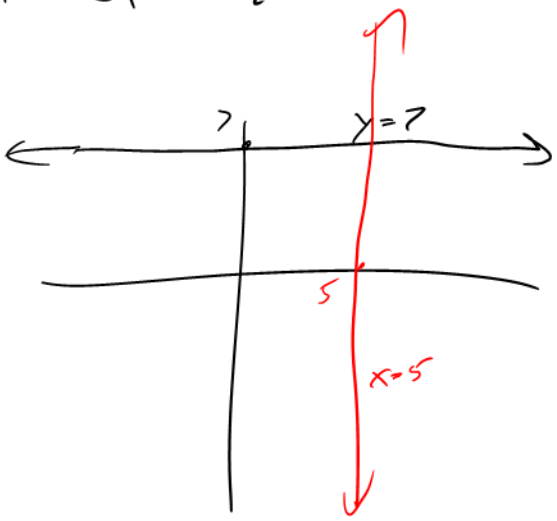
④ $y + 1 = 0$

$y = -1$

They share the y-int of -1

60 a) $y = 7$ d) $x = 5$

	$y = 7$	$x = 5$
Slope:	$m = 0$	undefined
x-int:	none (NA)	5
y-int:	7	none (NA)
Domain:	all numbers	5
Range:	7	all numbers



8.5 Methods for Graphing Linear Equations | pg 432

use the x and y intercepts to graph.

1. $3x + 2y = 6$

To Calculate the x-int, $y = 0$

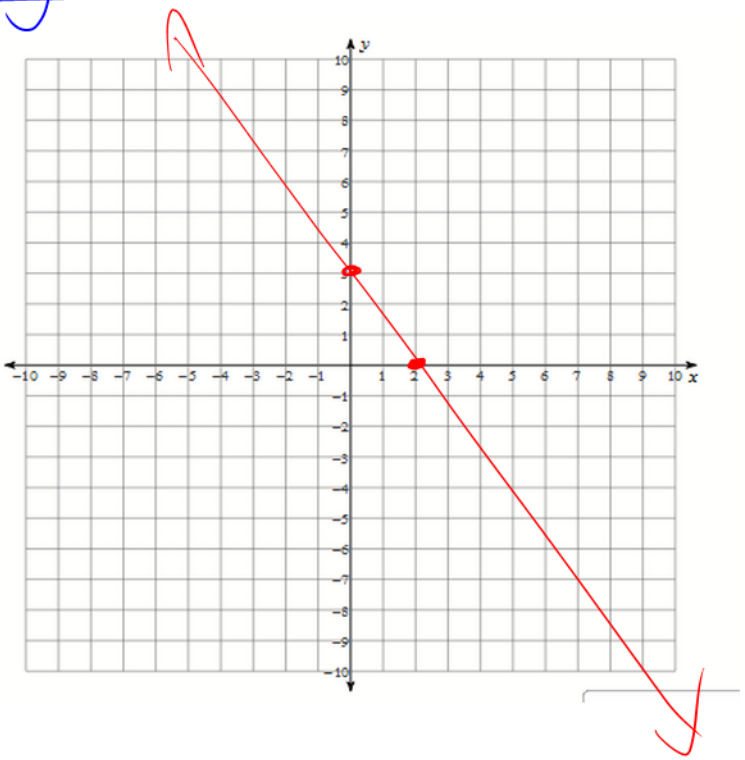
$\frac{3x}{3} + \frac{2(0)}{3} = \frac{6}{3}$

$x = 2 \quad \therefore (2, 0)$

To Calculate the y-int, $x = 0$

$\frac{3(0)}{2} + \frac{2y}{2} = \frac{6}{2}$

$y = 3 \quad \therefore (0, 3)$



4. $2x + y - 4 = 0$

x-int, $y = 0$

$2x + 0 - 4 = 0$

$2x = 4$

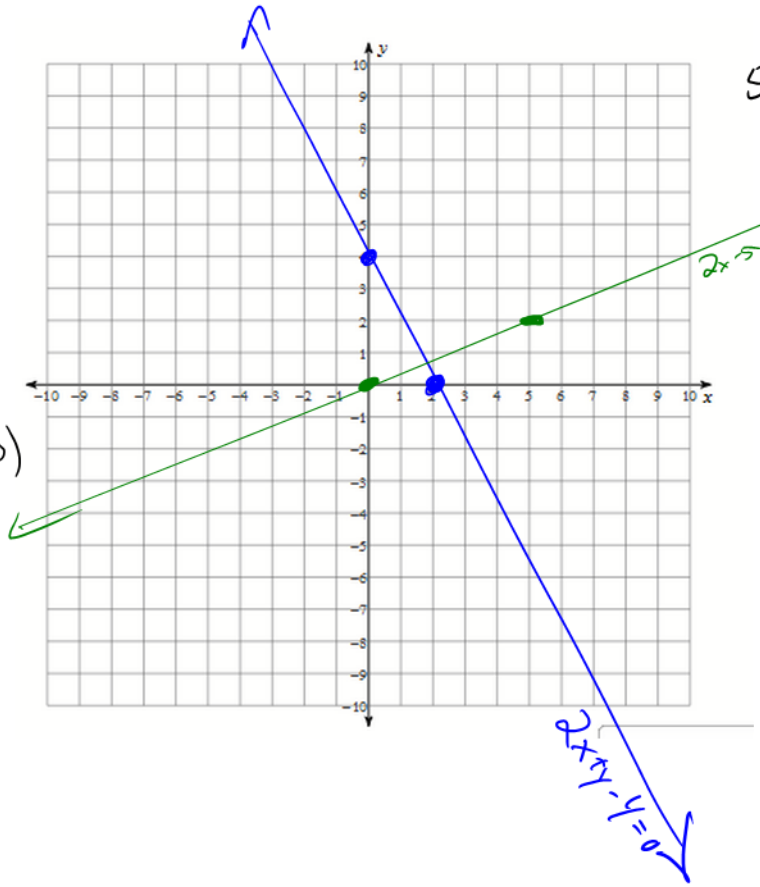
$x = 2$ $(2, 0)$

y-int, $x = 0$

$2(0) + y - 4 = 0$

$y = 4$

$\therefore (0, 4)$



5. $2x - 5y = 0$

x-int, $y = 0$

$2x - 5(0) = 0$

$2x = 0$

$x = 0$

$\therefore (0, 0)$

also the y-int!

Convert to $y = mx + b$

$2x = 5y$

$\frac{2}{5}x = y$

↑ slope

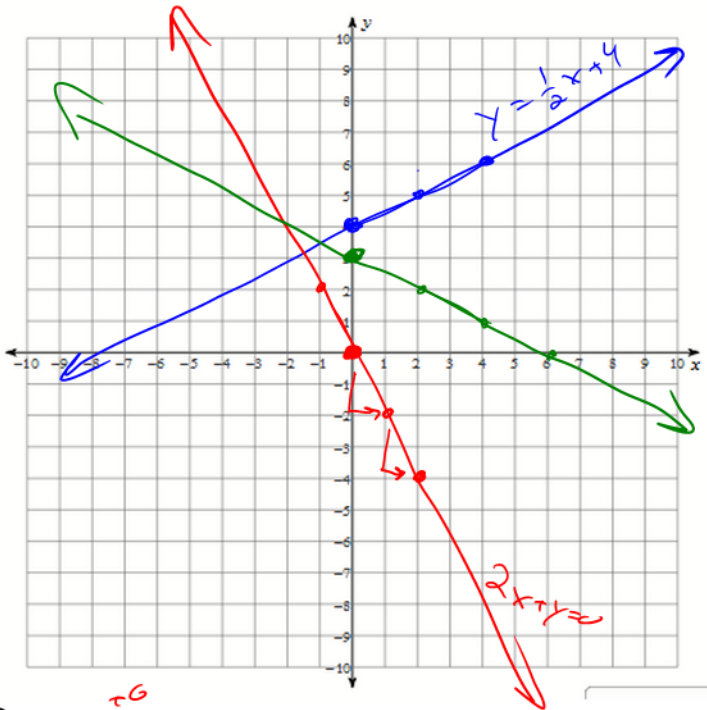
Graph using slope and y-int. $y = mx + b$

10. $y = 0.5x + 4$

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

$m = \frac{1}{2}$ ← Rise / Run

$b = 4$ ∴ y-int is $(0, 4)$



13. $2x + y = 0$

$y = -2x + 0$

$b = 0$

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

14. $x + 2y - 6 = 0$ (−x, +6)

$\frac{2y}{2} = \frac{-x}{2} + \frac{6}{2}$

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

∴ $b = 3$

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

Homework: 8.4 pg 428 # 50 to end

8.5 pg 432 # 2 – 12