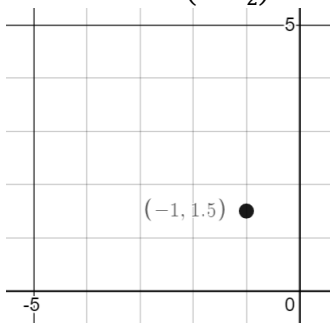
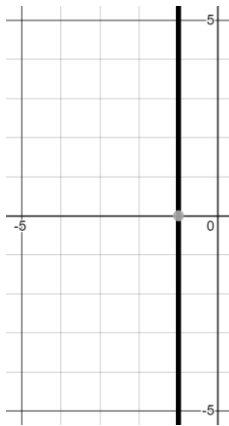


1. Plot the point $(-1, \frac{3}{2})$



2. $x = -1$

- a. Sketch the line



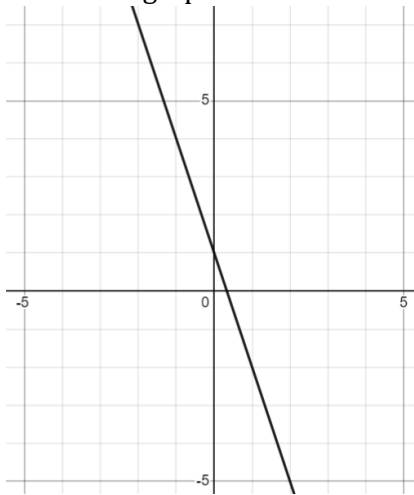
- b. What quadrants is this line in?
II and III

3. $y = -3x + 1$

- a. Create a table of values

x	$y = -3x + 1$
0	1
1	-2
2	-5
3	-8

b. Sketch the graph

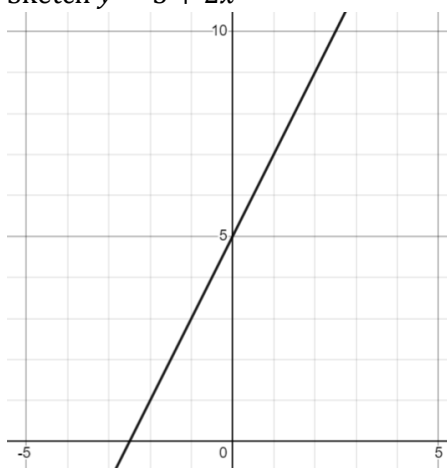


4. Given $y = mx + b$ what is the meaning of:

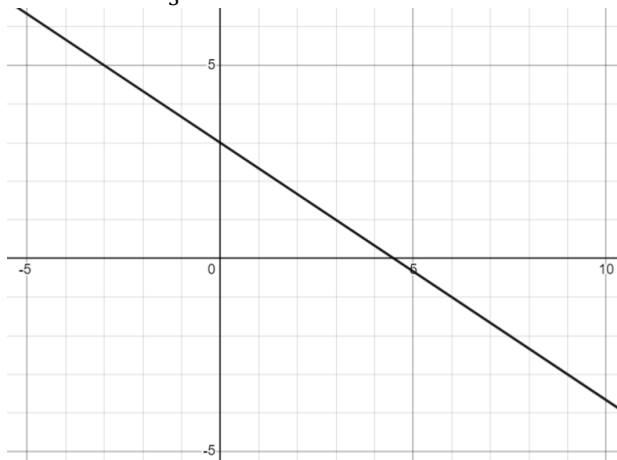
a. m ?
slope

b. b ?
y-intercept

5. Sketch $y = 5 + 2x$



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



7. Given the points $(1,1)$ and $(3,-3)$

a. Find the slope

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

b. Find the line equation in slope-point form: $y - y_1 = m(x - x_1)$

$$y - 1 = -2(x - 1) \text{ or}$$

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

c. Find the line equation in slope-intercept form: $y = mx + b$

$$y = -2x + 3$$

8. Given the points $(-\frac{8}{3}, 1\frac{1}{2})$ and $(2\frac{2}{3}, -1)$ find the slope

Points $(-\frac{8}{3}, \frac{3}{2})$ and $(\frac{8}{3}, -1)$

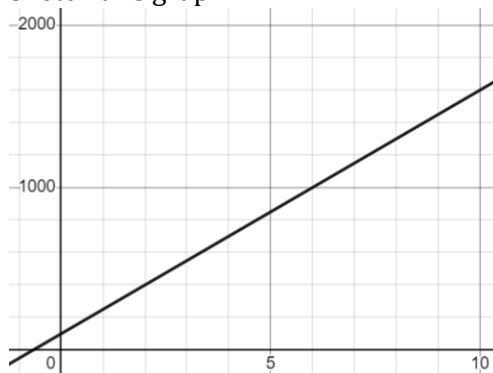
$$m = \frac{-1 - \frac{3}{2}}{\frac{8}{3} - (-\frac{8}{3})} = -\frac{5}{2} \div \frac{16}{3} = -\frac{5}{2} \times \frac{3}{16} = -\frac{15}{32}$$

9. You make \$150 per hour as a solid-state battery technician. You charge \$100 for an initial diagnosis fee.

a. What is the equation of your Money-time graph?

$$M(t) = 150t + 100$$

b. Sketch this graph



c. How much do you make for working 4 hours?

$$M = 150(4) + 100 = \$700$$

- d. How long do you have to work to earn \$1000?

$$1000 = 150t + 100$$

$$900 = 150t$$

$$6 = t$$

10. Your car burns 6L per 100 km and has a full tank of gas of 60L.

- a. Write the equation of the Volume distance graph.

$$V(d) = -0.06d + 60$$

- b. How much fuel do you have left in the tank after driving 300 km?

$$V(300) = -0.06(300) + 60 = 42 \text{ L}$$

- c. When do you run out of gas?

$$0 = -0.06d + 60$$

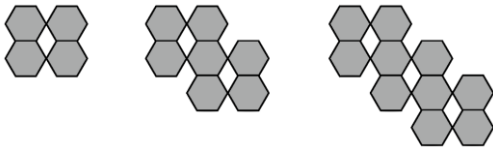
$$0.06d = 60$$

$$6d = 6000$$

$$d = 1000$$

After driving for 1000 km.

11. See figures 1, 2, and 3 below:



- a. How many hexagons are in figure 1000?

$$y = 3x + 1$$

$$y = 3(1000) + 1 = 3001$$

- b. What figure number contains 121 hexagons?

$$121 = 3n + 1$$

$$120 = 3n \rightarrow n = 40$$

12. $-10, -5, 0, 5, 10, 15, \dots$

Find the 50th number

$$y = 5x - 15$$

$$y = 5(50) - 15 = 250 - 15 = 235$$