

Coordinate Geometry Practice

1. Given the graph to the right:

a) Calculate the rate of change for each section.

$$A: m = \frac{80}{2} = 40 \text{ miles/hour}$$

$$B: m = 0$$

$$C: m = \frac{40}{1} = 40 \text{ miles/hour}$$

$$D: m = 0$$

$$E: m = \frac{-120}{2} = -60 \text{ miles/h.}$$

b) What does the rate of change represent?

The speed of the truck.

c) What happened during the 2-3 hour and 4-6 hour intervals?

He took a break or he was making a delivery/pickup.

d) Calculate the average rate of change from 0 to 8 hours. Why does this not make sense?

$$m = \frac{0}{8} = 0. \text{ Doesn't make sense because a lot happened in those 8 hours}$$

2. Calculate the slopes of the following:

a) $(-45, 76)$ and $(21, 208)$

b) $(13, -12)$ and $(-12, 13)$

$$m = \frac{208 - 76}{21 - (-45)}$$

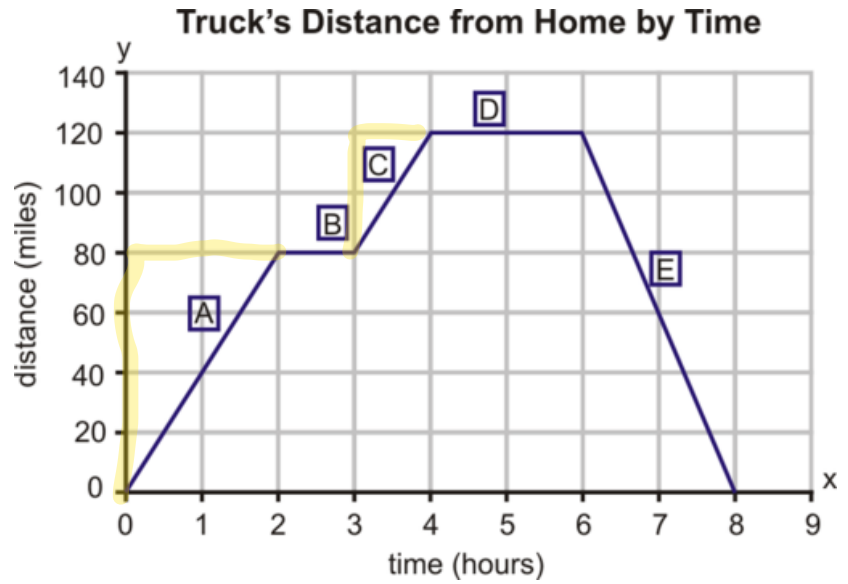
$$m = \frac{13 - (-12)}{-12 - 13}$$

$$m = \frac{132}{66}$$

$$m = \frac{25}{-25}$$

$$m = 2$$

$$m = -1$$



3. Calculate the rate of change:

Spring is in the air! On February 2, the temperature was -15°C . On February 13, the temperature was 3°C . What is the average rate of change of temperature per day?

(Day, temp)
 (2, -15)
 (13, 3)

$$m = \frac{3 - (-15)}{13 - 2}$$

$$m = \frac{18}{11}$$

$$m = 1.6^{\circ}\text{C/day}$$

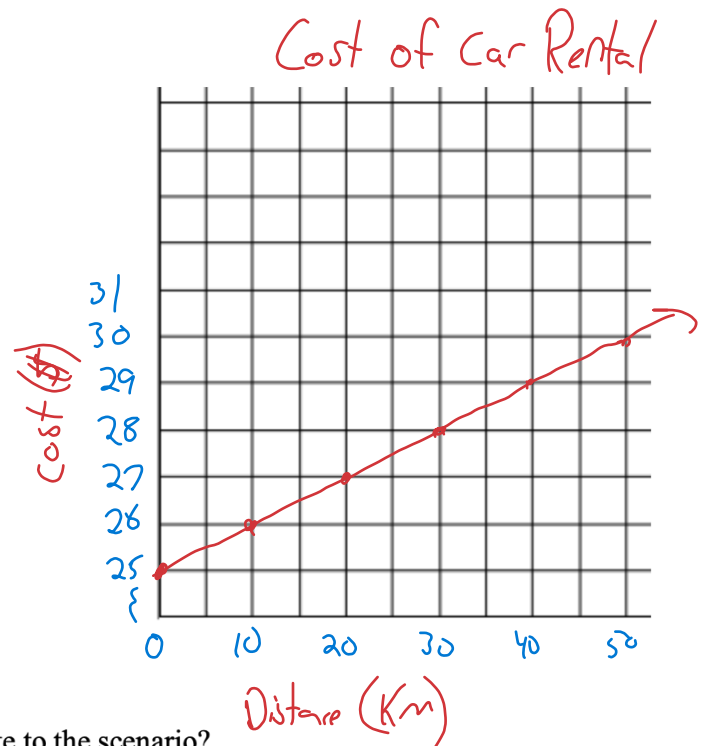
4. If it costs \$25 to rent a car and 0.10 cents per kilometer drive create a graph for the scenario.

HINT: Even if you do not drive the car off the lot it will still cost you \$25.

a. Find the rate of change of this graph.

Distance (Km)	Cost (\$)
0	25
10	26
20	27
30	28
40	29
50	30

$$m = \$0.10/\text{km}$$



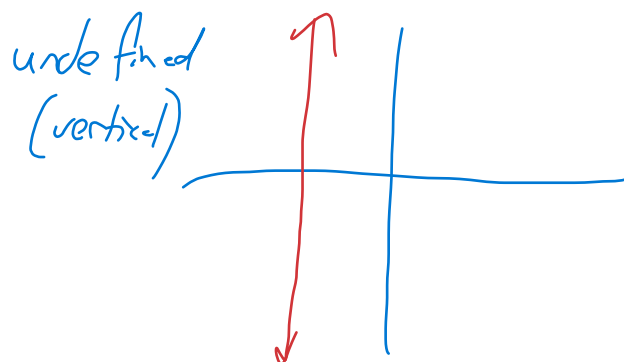
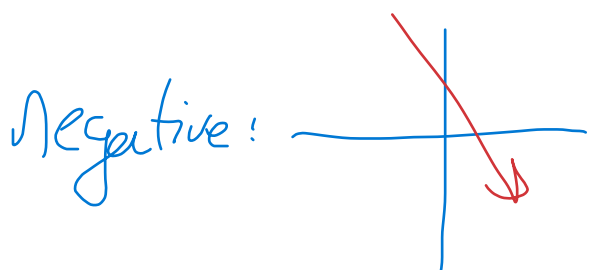
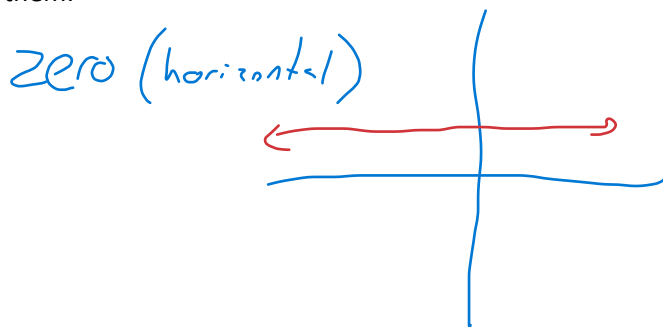
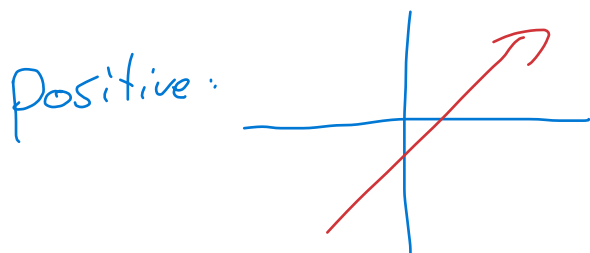
b. What does it represent? cost per km

c. What is the value on the y-axis? How does it relate to the scenario?
cost

d. If you paid the same fee to rent the car (\$25), but more per kilometer what would this look like? Sketch it on the graph.

price would go up faster, so it would be steeper.

5. Slope is a measure of how steep a line is. What are the four different types of slope discussed in class?
Draw an example of each (a rough sketch will do) and label them.



6. Use the algorithm to graph the following lines on the grid below. Label the lines.

1. $2x - 5y = -15$

$2x + 15 = 5y$
 $\frac{2}{5}x + 3 = y$

Red

x	y = $\frac{2}{5}x + 3$	(x, y)
10	$\frac{2}{5}(10) + 3 = 7$	(10, 7)
5	$\frac{2}{5}(5) + 3 = 5$	(5, 5)
0	$\frac{2}{5}(0) + 3 = 3$	(0, 3)
-5	$\frac{2}{5}(-5) + 3 = 1$	(-5, 1)
-10	$\frac{2}{5}(-10) + 3 = -1$	(-10, -1)

3. $3x + 5y = -15$

$5y = -3x - 15$
 $y = -\frac{3}{5}x - 3$

Orange

x	y = $-\frac{3}{5}x - 3$	(x, y)
10	$-\frac{3}{5}(10) - 3 = -9$	(10, -9)
5	$-\frac{3}{5}(5) - 3 = -6$	(5, -6)
0	$-\frac{3}{5}(0) - 3 = -3$	(0, -3)
-5	$-\frac{3}{5}(-5) - 3 = 0$	(-5, 0)
-10	$-\frac{3}{5}(-10) - 3 = 3$	(-10, 3)

2. $3x + 2y = 8$

$2y = -3x + 8$
 $y = -\frac{3}{2}x + 4$

Purple

x	y = $-\frac{3}{2}x + 4$	(x, y)
4	$-\frac{3}{2}(4) + 4 = -2$	(4, -2)
2	$-\frac{3}{2}(2) + 4 = 1$	(2, 1)
0	$-\frac{3}{2}(0) + 4 = 4$	(0, 4)
-2	$-\frac{3}{2}(-2) + 4 = 7$	(-2, 7)
-4	$-\frac{3}{2}(-4) + 4 = 10$	(-4, 10)

4. $7x - 2y = -4$

$7x + 4 = 2y$
 $\frac{7}{2}x + 2 = y$

Magenta?

x	y = $\frac{7}{2}x + 2$	(x, y)
4	$\frac{7}{2}(4) + 2 = 16$	(4, 16)
2	$\frac{7}{2}(2) + 2 = 9$	(2, 9)
0	$\frac{7}{2}(0) + 2 = 2$	(0, 2)
-2	$\frac{7}{2}(-2) + 2 = -5$	(-2, -5)
-4	$\frac{7}{2}(-4) + 2 = -12$	(-4, -12)

