

1. The following represents the graph for a helium balloon's flight.

a. Determine the rate of change of the graph.

$$m = \frac{\text{rise}}{\text{run}} = \frac{1000}{1} = 1000 \text{ ft/min}$$

b. What does this slope (rate of change) mean?

every 1 minute, the balloon rises 1000 ft.

c. When is the balloon at 5000 ft? Show this on your graph. 5 min

$$t = 5$$

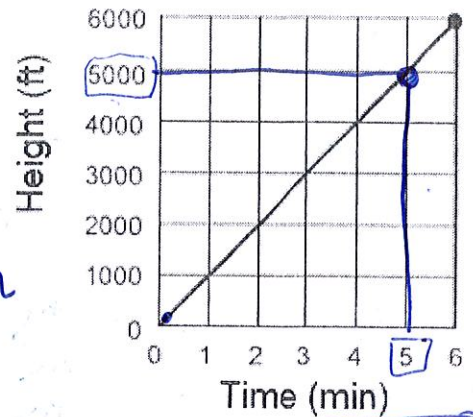
d. How high is the balloon off the ground at 2 seconds? Show this on your graph

at 2 min: 2000 feet } $\frac{1000 \text{ ft}}{60 \text{ sec}} = 16.\overline{66} \text{ ft/sec} \times 2 = \text{span style="border: 1px solid black; padding: 2px;">33.33 ft}$

e. Although not on the graph, when will the balloon reach 10 000 feet? Show your reasoning

10 minutes, every ~~1~~ 1 minute, the balloon rises 1000 ft

Time vs. Height



2. The following represents the balance in Brady's savings account.

a. Find the slope of the graph.

$$m = \frac{\text{rise}}{\text{run}} = \frac{1200}{12} = 100 \text{ dollars/month}$$

b. What does the slope represent as a rate of change?

Every month, the savings account increases \$100

c. How much did Brady deposit when he opened the account?

\$300

d. At this rate how much money will Brady have in his account after 15 months. Show your reasoning.

\$1800

e. If Brady deposited \$500 to begin with, but continued to deposit the same amount each month what would this graph look like? Sketch it on the graph.

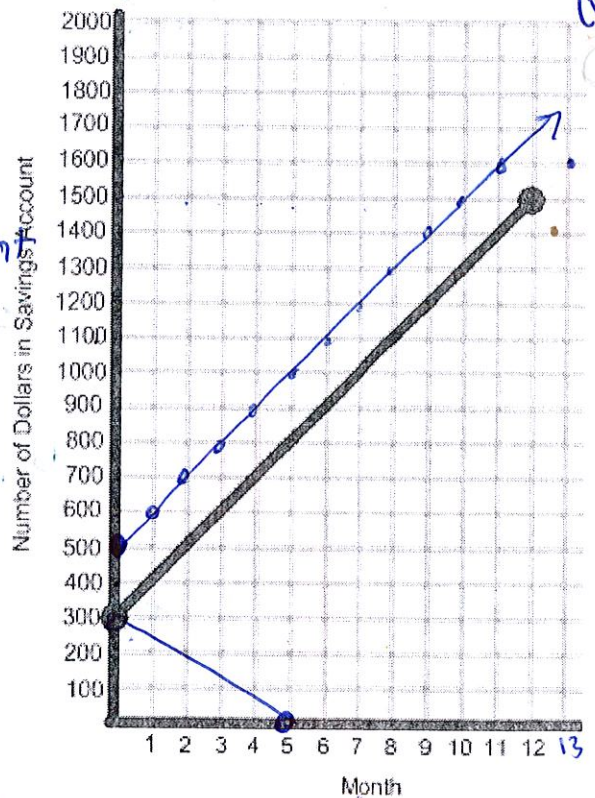
parallel lines

f. If Brady deposited \$300 initially, but spent it all in five months show this on the graph?

g. What would the slope of this line be? What does the negative sign indicate?

$$\frac{-300}{5} = -60$$

Neg. sign means Brady is losing money



3. Rojen makes \$7 per hour babysitting. Create a table of values and graph for this scenario

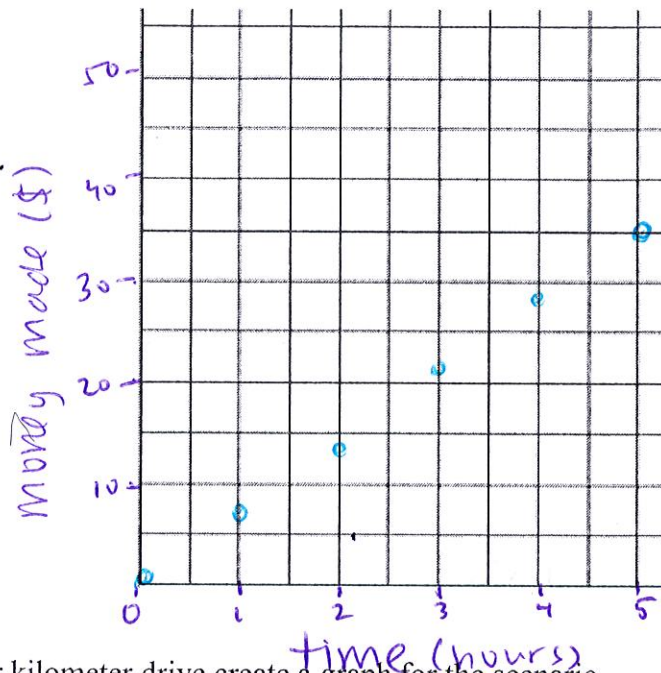
a. Find the rate of change of the graph.

b. What does it represent?

$$m = \frac{\text{rise}}{\text{run}} = \frac{7}{1} = 7$$

every hours Rojen works he earns \$7... \$7/hr

Time (h)	Money Made (\$)
0	0
1	7
2	14
3	21
4	28
5	35



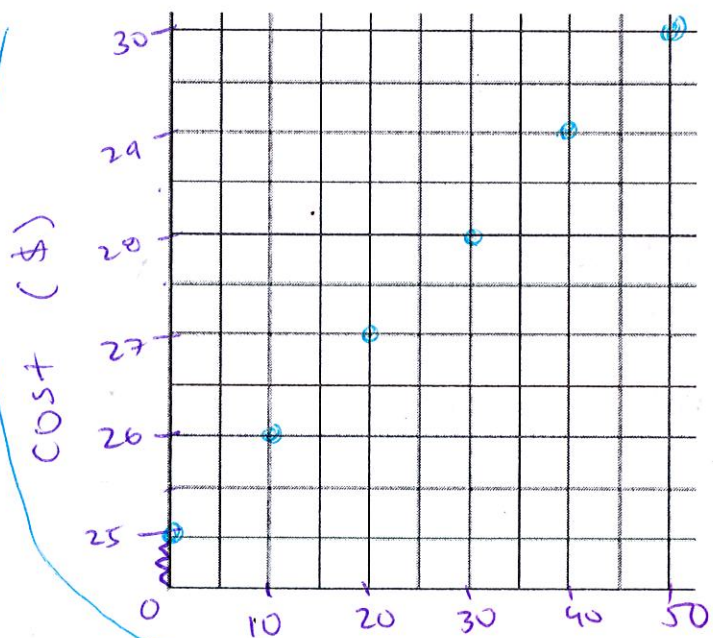
4. If it costs \$25 to rent a car and 0.10 cents per kilometer drive create a graph for the scenario.

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. $ROC = \frac{1}{10}$

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

Annotations: 'RUN' in pink next to the x-axis, 'RISE' in pink next to the y-axis. On the left, five pink arrows point from the x-axis to the y-axis, each labeled '+10'. On the right, five pink arrows point from the y-axis to the x-axis, each labeled '+1'. At the bottom right, 'RISE' is written in pink.



b. What does it represent?

For every \$1 increase in cost, a car can be driven 10 more km

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

25; even if 0 km are driven, still cost \$25 to rent car

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.

steeper slope

5.a. What is the slope of this graph?

Zero

b. Interpret this slope as a rate of change.

~~For every week, 0 books~~

~~at~~

c. Explain this rate of change in words.

ROC is zero,

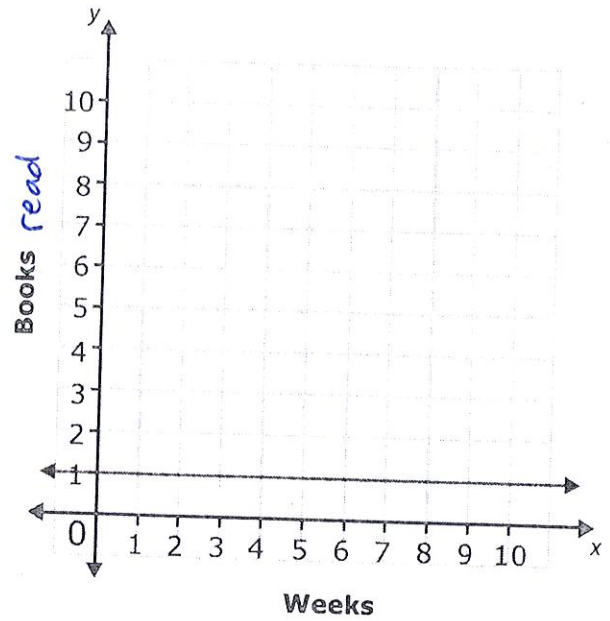
d) How many books has this person read in:

a. 2 weeks

b. 8 weeks

1 book

1 book



6.a. What is the slope of this graph?

$$\frac{3}{2} = 1.50$$

b. Interpret the slope as a rate of change.

For every \$3 increase, distance increases by 2 miles

c. What is the cost if the distance is zero?

\$15

d. Create a scenario to match this graph.

It costs \$15 to rent a bike plus \$1.50 for each mile biked

