

Warm Up:

Given $R = 50p$, determine:

- a) constant of variation b) fixed value c) slope of the line

If R represents the money raised at a fundraising event, and p represents the number of people, determine how many people came if \$6500 was raised.

Unit 5: Linear Relations I

Day 6 - Connecting and Applying

So far, we have learned how to identify a linear relation from a(n):

- 1.
- 2.
- 3.

AND

- we can tell if a linear relation is direct or partial by the graph or by the form of the equation

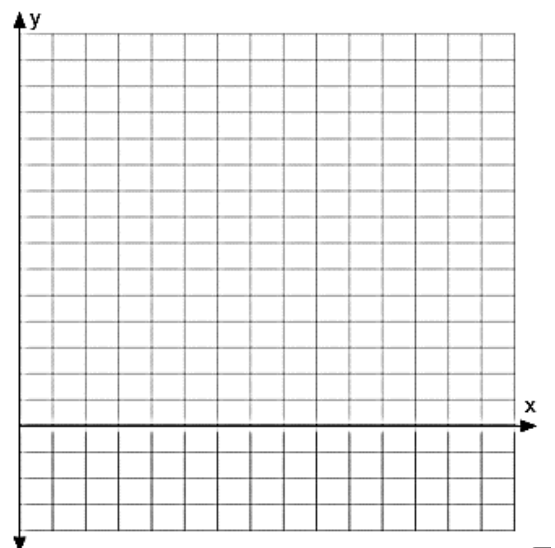
- we can calculate slope of a line

Now, let's tie it all together!!!

Ex. 1 The following table shows the height above the ground of a snail as it crawls up a pipe.

Time (mins)	Height (cm)
0	-3
3	1
6	5
9	9
12	13

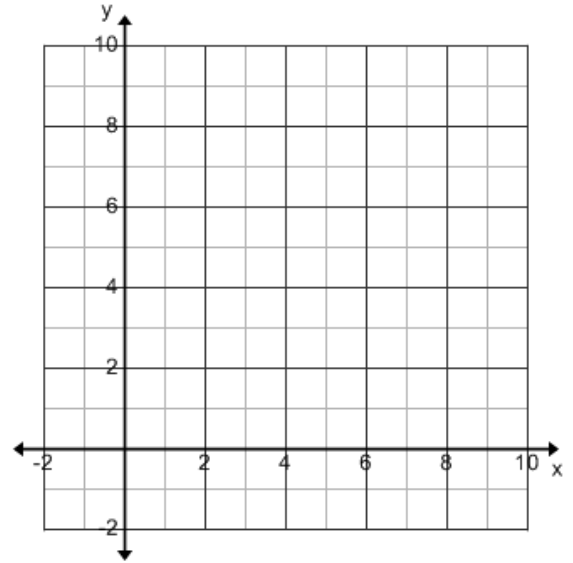
- a) Graph this relation. Is it partial or direct variation?
- b) Use first differences to confirm that the relation is linear.
- c) Calculate the slope.



- d) What is the initial height of the snail?
- e) Write the equation of the line.

Ex. 2 y varies partially with x . When $x = 0, y = 3$ and when $x = 6, y = 8$.

a) Find the slope and the vertical intercept (y intercept) of the line.



b) Graph the relation.

c) Write an equation to represent this partial variation.

Ex. 3 A company tests heavy duty elastic bands by measuring how much they stretch when supporting various masses.

Mass (kg)	0	2	4	6	8
Length (cm)	6.2	9.6	13.0	16.4	19.8

a) Determine if this relation is linear.

b) What does the point $(0, 6.2)$ represent?

c) Calculate the slope. What does it represent?

d) Write an equation in the form of $y = mx + b$.

e) Predict how long the elastic band would be when it is supporting 10 kg.