

Focus:

1. To be able to describe a possible situation for a graph.
2. To be able to sketch a graph for a particular situation.

Curricular Competencies:

A2: I can explore, analyze and apply mathematical ideas.



What is a relation?

A relation is: a connection between 2 things

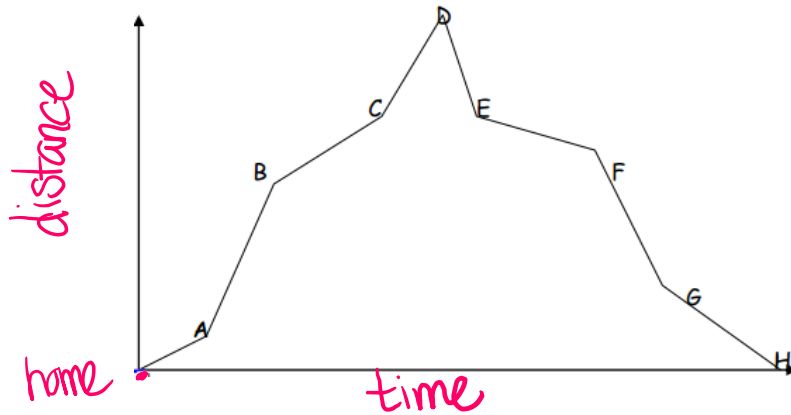
Ex. distance + time

Types of Trends

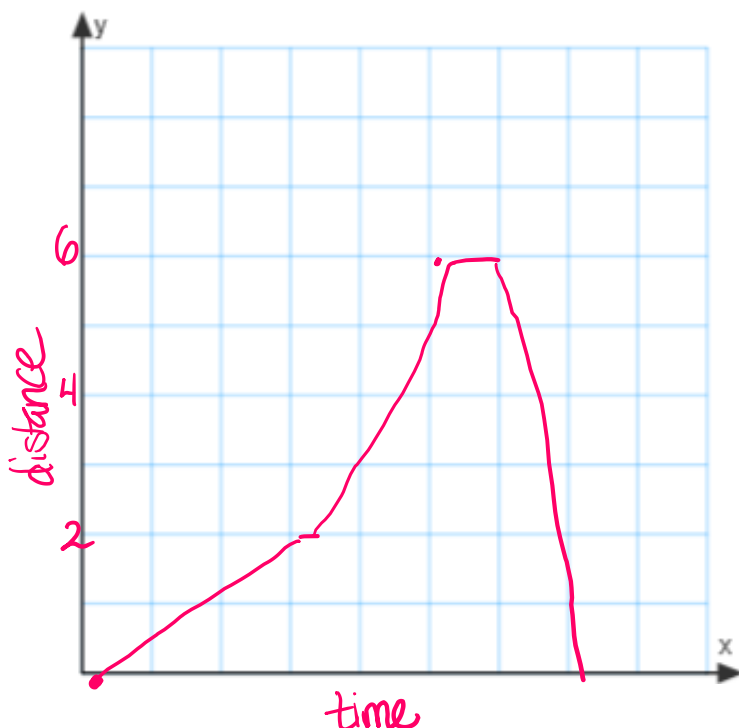
When looking at the graphs of relations, different trends on the graph reflect different relationships between the quantities being graphed. There are 3 main types of trends that we will observe.

Sample Drawing	What it Means	Example Situation
	<ul style="list-style-type: none"> • data is changing at a constant rate 	<ul style="list-style-type: none"> • going for a walk at the same speed • hourly rate of pay
	<ul style="list-style-type: none"> • data increases + then levels off + then decreases 	<ul style="list-style-type: none"> • growth of a person • chemical reaction (baking soda + vinegar)
	<ul style="list-style-type: none"> • very consistent * data doesn't change 	<ul style="list-style-type: none"> • standing at a spot

A cyclist is training for a race. Below is the graph of his distance from home compared to time. Describe what is happening at each labeled point of the graph.



<p>A: light warm-up</p>	<p>AB: going pretty fast</p>	<p>BC: slows down a bit</p>	<p>CD: increases speed</p>
<p>DE: still going quickly starting back home</p>	<p>EF: slowed down significantly</p>	<p>FG: final sprint</p>	<p>GH: slowed down arrives at home</p>



Draw a graph to illustrate the following situation: Christine leaves her home and walks to her work. After checking the schedule, she jogs to the store and picks up some things for dinner. After shopping, Christine runs directly home. Use the following distances to help you draw your graph:

Home to work: 2 km Work to store: 4 km
Store to home: 6 km

The graph shows how the number of cans in a vending machine varies during the day.

- a. Describe how the number varies, given times, and number of cans in the machine.

250 cans at 8am

8-10am goes down by 25 cans

10-10:30am coffee break down 75 cans

10:30-12:30 slow decrease by 50 cans

12:30 restock machine

12:30-1:30 lunch decrease by 100 cans

- b. When is the morning break, and when is lunch?

10-10:30am

12:30-1:30pm

- c. What happens at 12:30 pm?

restock

- d. How many cans were sold?

300 cans

- e. At what times are there 300 cans in the machine?

1:30pm ~ 12:30pm when restocking

- f. How many cans are there at 10:30 am?

150 cans

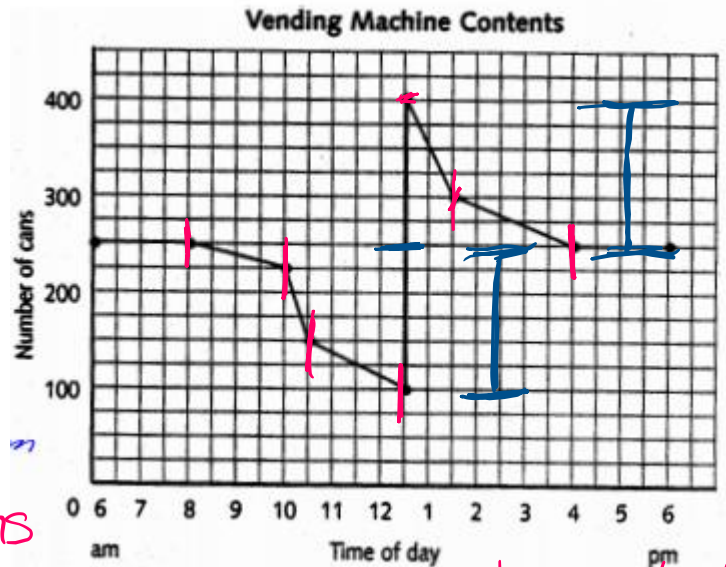
- g. At what times are there 250 cans in the machine?

6am - 8am

4pm - 6pm

} 4pm - 8am

12:30pm when restocking



1:30-4pm slow decrease by 50 cans