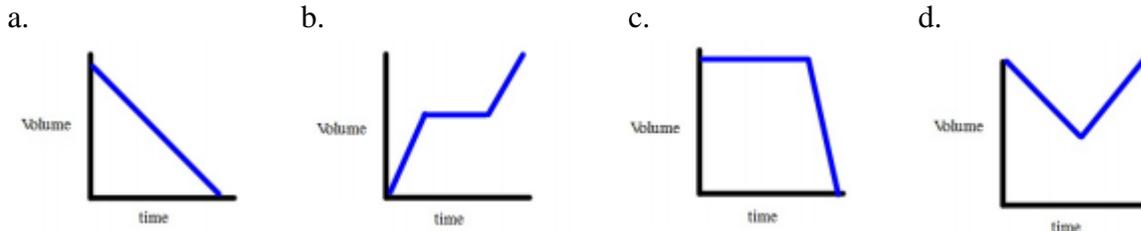


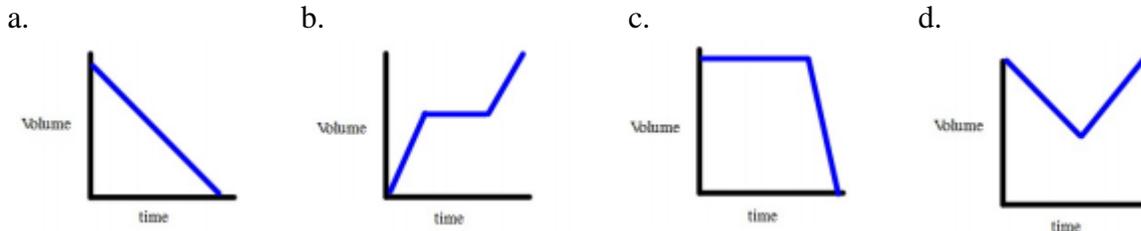
Interpreting and Sketching Graphs of Relations/Functions

For the **first 5 questions**, choose the graph (function) that will best represent the situation being described about filling up and emptying a fish tank. **Choose all that may apply.**

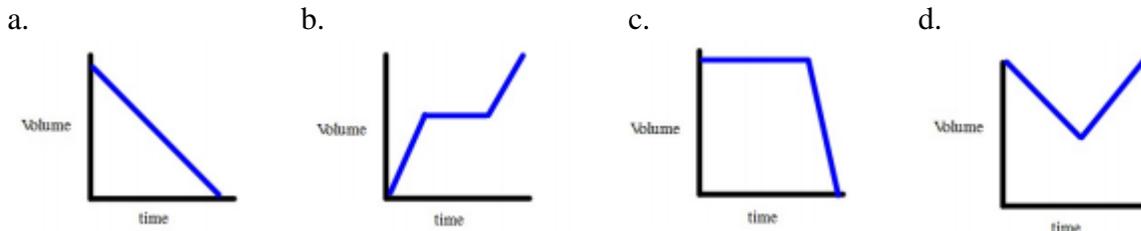
1. The tank was dirty so you had to change the water. Fish tanks require only changing some of the water.



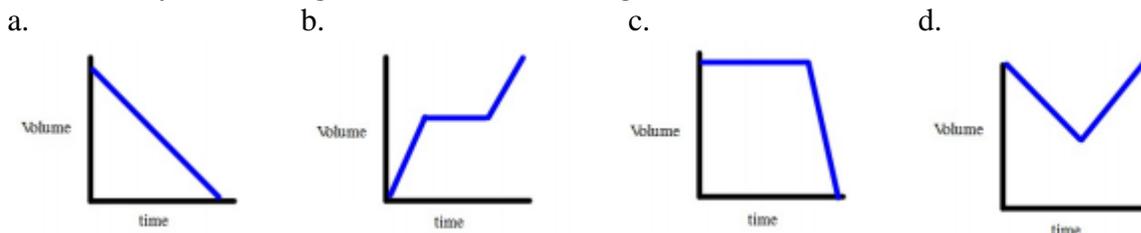
2. I bought a new fish tank. I had to fill up a bucket and pour water into the tank twice to fill it.



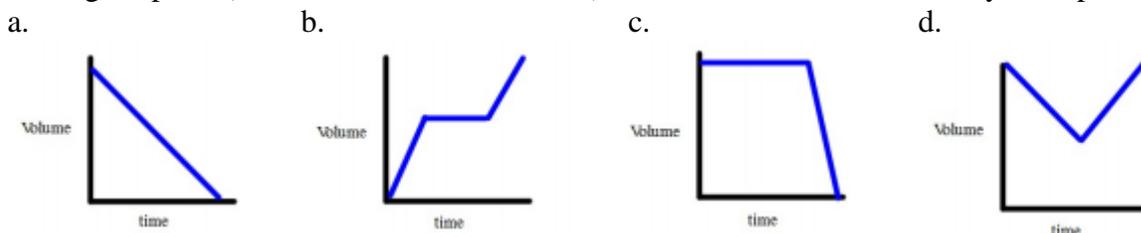
3. I am taking my fish tank to college with me. I had to empty it.



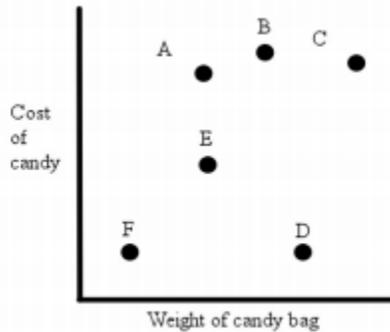
4. I was in my room doing math homework. The glass on the tank shattered and water rushed out very fast.



5. Using a siphon (a tube used to remove water) I removed water at a relatively slow pace until it was empty.



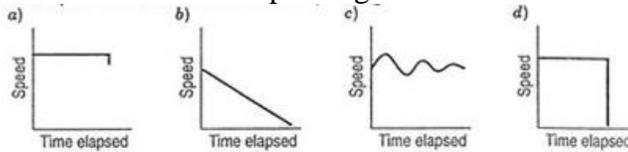
6. In the food store there is a bin of assorted candy. You scoop out what you like and the bag is weighed. The cost and weight of 6 bags of candy is recorded and graphed. Use the graph to answer the questions.



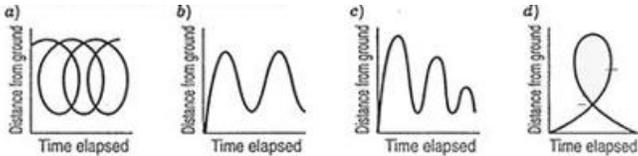
- Is the cost of candy (output) a function of the weight (input)? Why?
- Which bag is the heaviest?
- Which bag is the cheapest?
- Which candy bags have the same weight?
- Which candy bags are the same price?
- Which bag is more value for your money, F or D?
- Which bag is more value for your money, A or E?
- Which two bags would give you the same value for your money?

7. For the next **5 questions**, choose the graph that will best represent the situation being described.

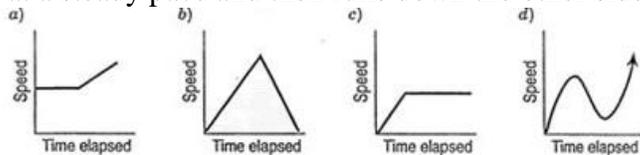
- i) A train pulls into a station to let out the passengers.



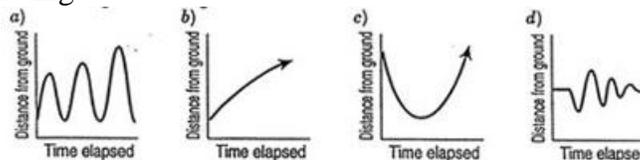
- ii) You take a ride on a Ferris wheel.



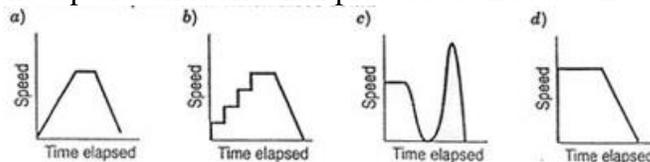
- iii) You climb a hill at a steady pace and then runs down the other side.



- iv) You swing on a swing.

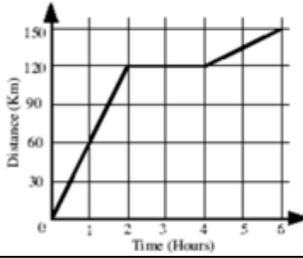


- v) You climb up to the top of a slide and then proceed to slide down.

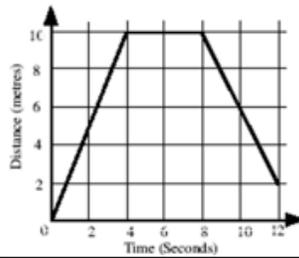


8. Match each graph with the story below.

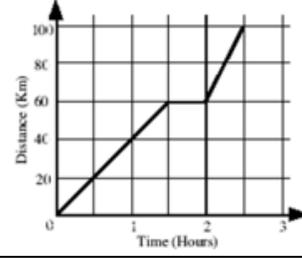
a.



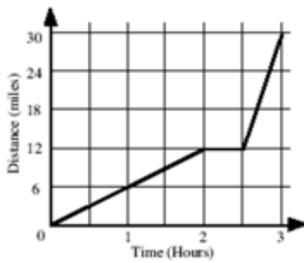
b.



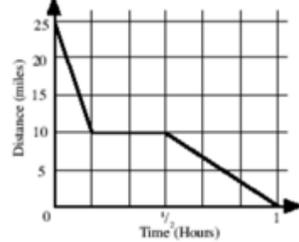
c.



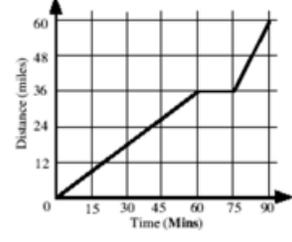
d.



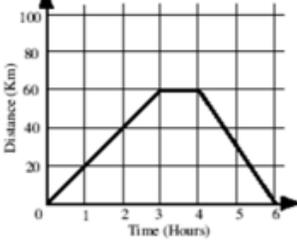
e.



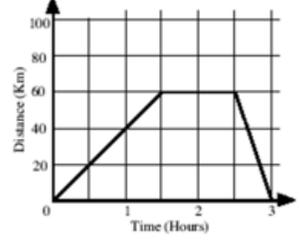
f.



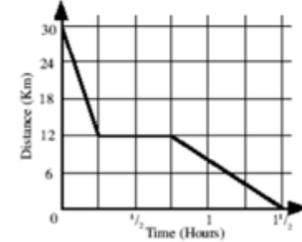
g.



h.



i.



1.

A coach leaves the station at 10am and reaches Gloucester station at 11.30am. It stops here for half an hour. It then carries on for 30 minutes reaching Worcester 40 km later.

4.

A cyclist rides downhill towards home for 15 minutes. At the bottom of the hill she stops for half an hour for a drink. She then continues uphill for the remaining 12 km.

7.

A car travels at a constant speed for 2 hours on the motorway. It stops at the service station for two hours, then travels in heavy traffic at for 30 km

2.

A bus leaves school at 9am and gets to its destination at 10.30am. The children look around the museum for an hour then return back to school. The bus arrives back at midday.

5.

A toddler rides his bike up the pavement for 10m. He then turns around and rides back. 2m from home, he hits a bump and falls off his bike.

8.

A motorbike rider rides for 36 miles at a steady speed. She stops to read the map for 15 minutes then rides for the remaining 24 miles at a very illegal fast speed.

3.

A man drives to his friend's house who lives 60 km away, stops for an hour then returns home in 2 hours.

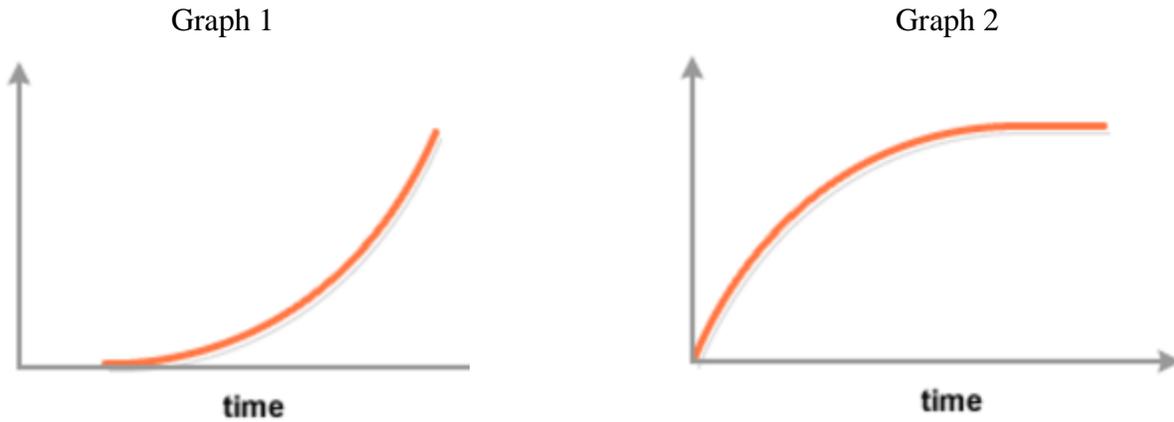
6.

A cyclist rides for 2 hours travelling constant speed. He then stops to rest for 30 minutes then continues for a further 18 miles.

9.

A train is travelling back to Bristol. After 15 miles, a tree has fallen on the track at Bath and the train stops for 20 minutes while it is cleared. The train then travels the remaining 10 miles slowly.

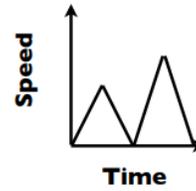
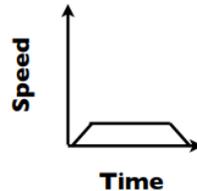
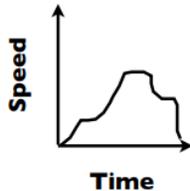
9. Both of the following graphs show an insect population growing over time.



- a. Compare the graphs above by discussing one similarities and one difference.
- b. One of the graphs is a population of bees in a growing in a hive. Which one and why?

10. Match each of the following graphs with the ride specified at the amusement park. Explain each one.

- A) Merry-Go-Round
- B) Roller Coaster
- C) Extreme Elevator Drop



11. Sketch a graph of this story. You are holding a ball in your hand. You throw it up and it lands on the ground. Make a distance vs. time graph that may represent a picture of this story.

