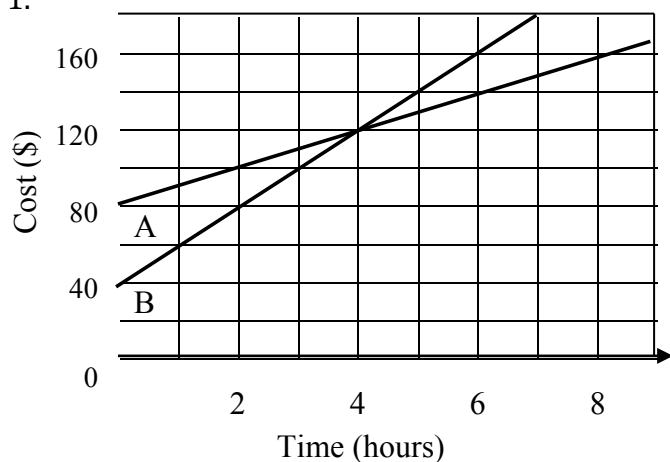


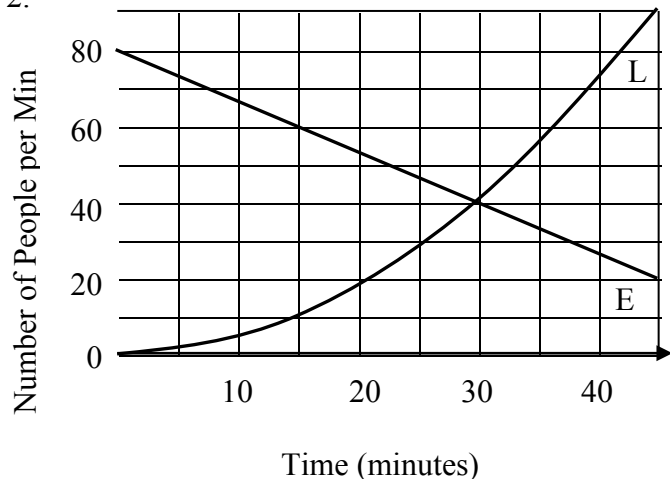
Use the graphs below to answer the following questions.

1.

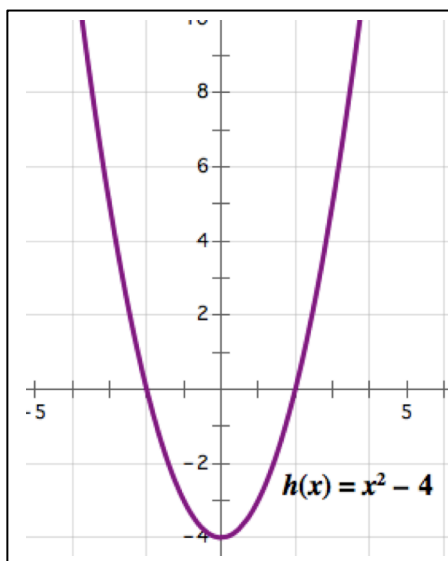


- What is the flat fee that plumber A charges for a service call?
- What is the flat fee that plumber B charges for a service call?
- How much will you pay plumber A for a job that takes 2 hours?
- If your bill from plumber B totals \$160, how long did the job take?
- For what length job will plumber A and plumber B cost the same? How can you tell?

2.



- At what rate are people leaving the gym at the start of the game?
- At what rate are people entering the gym at the start of the game?
- After how many minutes are people entering the gym at a rate of 60 people per min?
- After how many minutes are people leaving the gym at a rate of 10 people per min?
- After how many minutes does the number of people in the gym reach a maximum? How can you tell?
- Over what time period is the number of people in the gym increasing? How can you tell?
- Over what time period is the number of people in the gym decreasing? How can you tell?



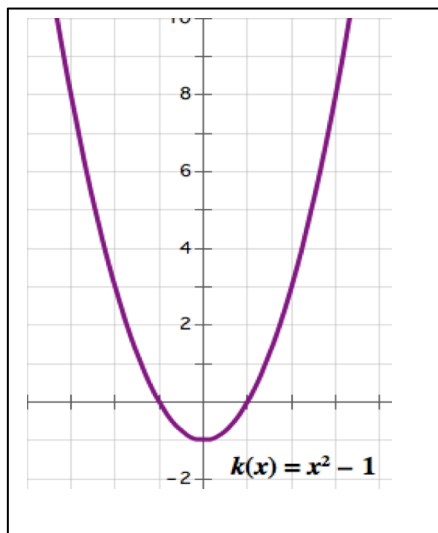
3. Using the graph  $h(x) = x^2 - 4$ , write the set notation for the following quadratic inequalities.

a.  $x^2 - 4 > 0$

b.  $x^2 - 4 < 0$

c.  $x^2 - 4 = 0$

d.  $x^2 - 4 = -4$



4. Using the graph  $h(x) = x^2 - 1$ , write the set notation for the following quadratic inequalities.

a.  $x^2 - 1 > 0$

b.  $x^2 - 1 < 3$

c.  $x^2 - 1 > 8$

d.  $x^2 - 1 < 0$

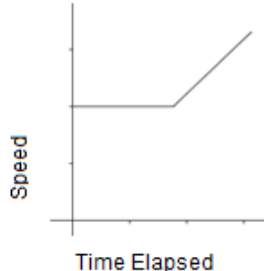
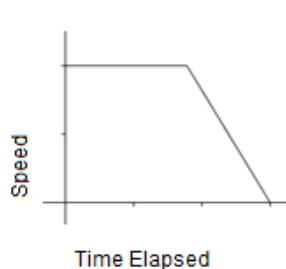
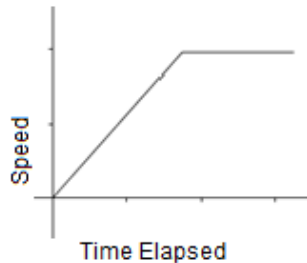
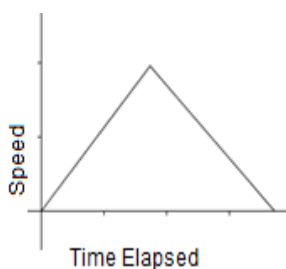
5. A bicyclist climbs up a hill at a steady pace of 10 miles per hour and then slows down and comes to a complete stop. Which graph best represents her speed as a function of time?

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_



Use the words in the box below and match them to each shape of the graph.

- a. Constant b. Increasing c. Decreasing d. Linear  
 e. Increasing at an increasing rate f. Decreasing at a decreasing rate  
 g. Increasing at a decreasing rate h. Decreasing at an increasing rate

6.

Shape of A:

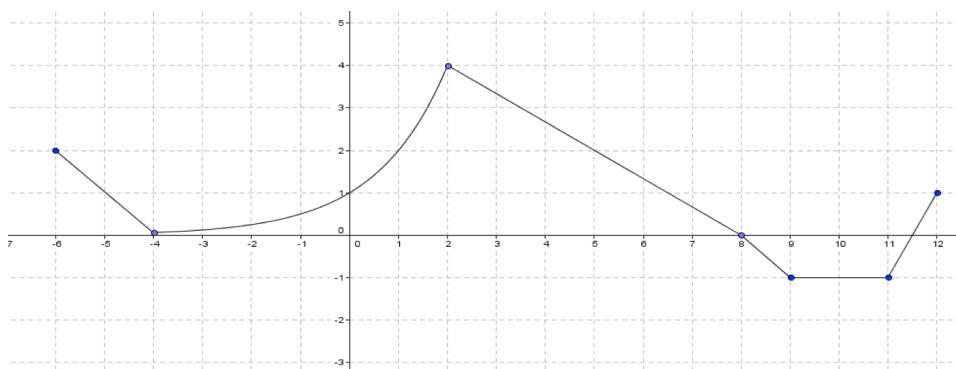
Shape of B:

Shape of C:

Shape of D:

Shape of E:

Shape of F:



7.

Shape of A:

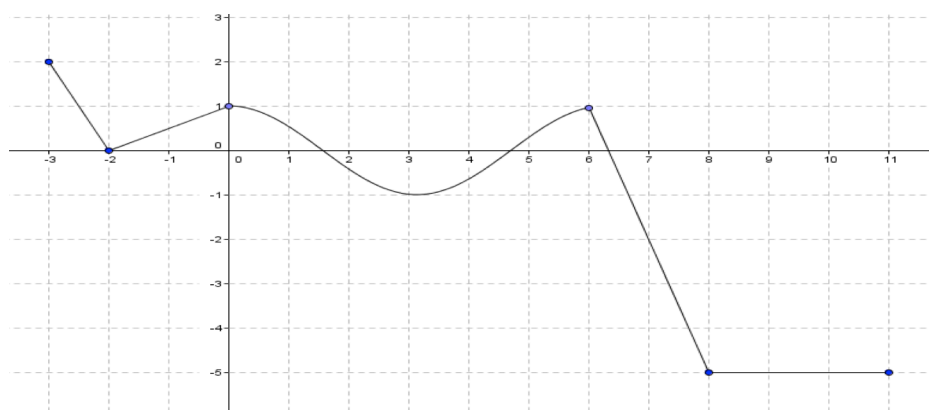
Shape of B:

Shape of C:

Shape of D:

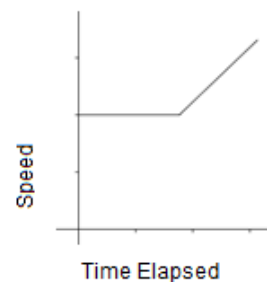
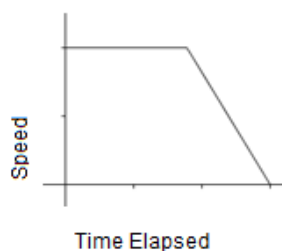
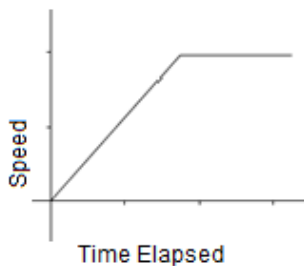
Shape of E:

Shape of F:

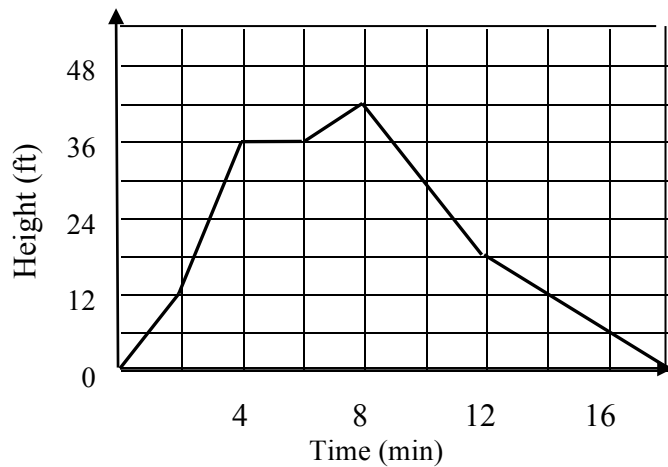


8. You are driving at a constant speed and then speed up as you drive down a hill. Which graph best represents her speed as a function of time?

- a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_ d. \_\_\_\_\_

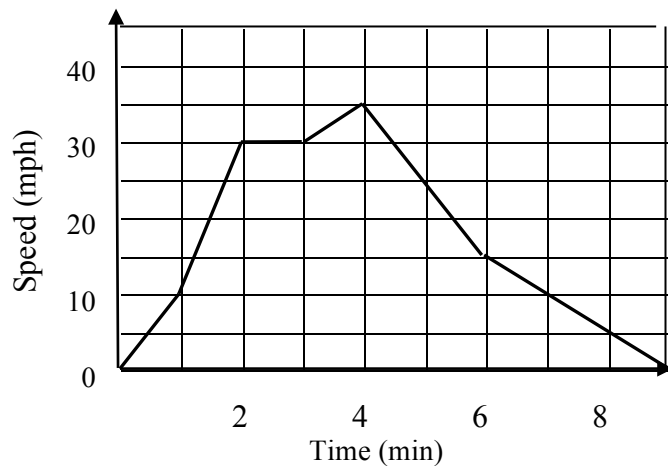


9.  
The following graph shows Logan's height above the ground in feet as he climbs a tree to get a coconut.



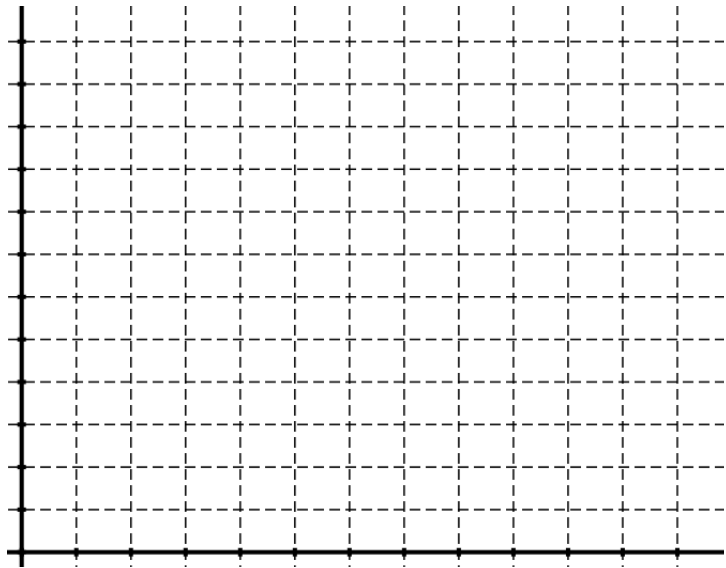
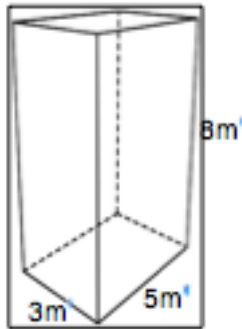
- Where was Logan when no time had elapsed?
- How high did Logan climb?
- When did Logan reach his maximum height?
- How many feet above the ground was Logan after 12 minutes?
- When was Logan 24 feet above the ground?
- When 18 minutes had passed, where was Logan?
- Describe what Logan might be doing between 4 and 6 minutes.

10.  
The following graph shows Taylor's speed in miles/hour while driving to the store.



- When did Taylor reach her maximum speed?
- What was Taylor's maximum speed?
- How fast was Taylor driving 5 minutes into her trip?
- When was Taylor traveling at 10 mph?
- When did Taylor stop?
- Describe what Taylor might be doing between 2 and 3 minutes.

11. Shaun is filling a rectangular container (shown above) at a rate of 20 cubic meters per minute for the first six minutes. Then, she got impatient and turned the flow rate up to 40 cubic meters per minute. Sketch the height of the water  $h(t)$  as a function of time  $t$ .



12. Kaniela is filling a rectangular container (shown above) at a rate of 5 cubic meters per minute for the first 4 minutes. He takes a break for 3 minutes and then he turned the water on full blast and filled the remainder of the container in 3 minutes. Sketch the height of the water  $h(t)$  as a function of time  $t$ .

