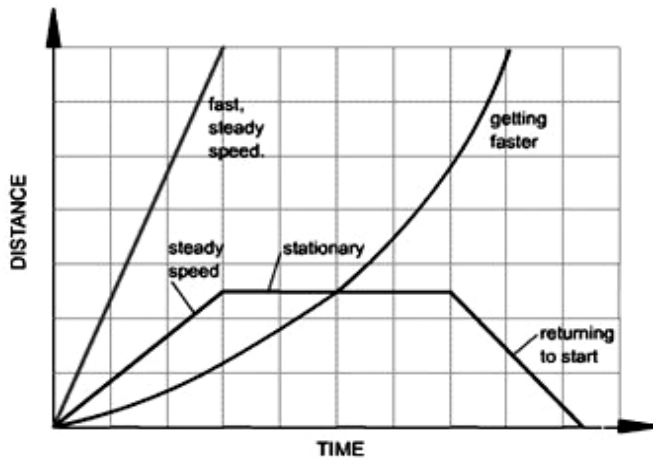


Worksheet 6-5: Graphical Stories

A distance-time graph tells us how far an object has moved with time.



- The steeper the graph, the faster the motion.
- A horizontal line means the object is not changing its position - it is not moving, it is at rest.
- A downward sloping line means the object is returning to the start.

INTERPRETING STORIES AND GRAPHS**Stories from Graphs****Graphs from Stories****Write Your Own Story****Story Actions:**

55 mph for one hour

25 mph for 45 minutes

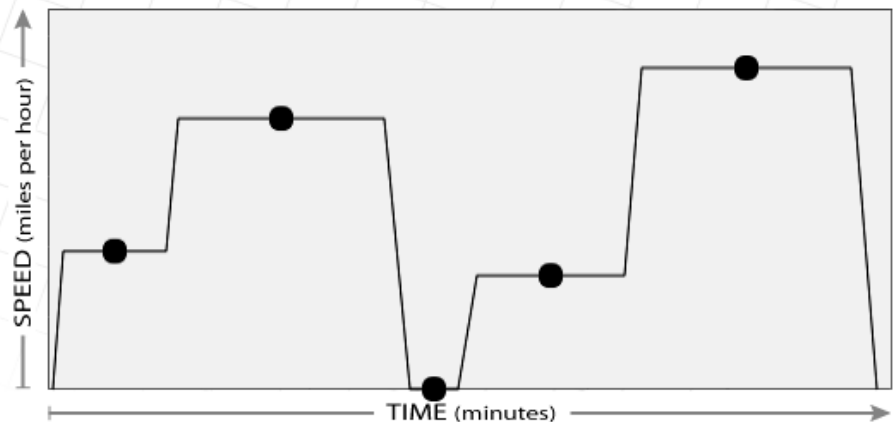
30 mph for 30 minutes

65 mph for one hour

stopped for a snack

Graphs can be used to describe situations in stories. Using the graph as a guide, drag each story action to its correct place in the story.

My family went on a day trip to the beach. We left at 8 a.m. and drove _____, until we reached the highway. We drove _____, then _____. When we got back onto the highway, construction merged traffic into one lane, and we averaged about _____. Once the traffic cleared, we sped up to _____, until we reached the beach at noon.



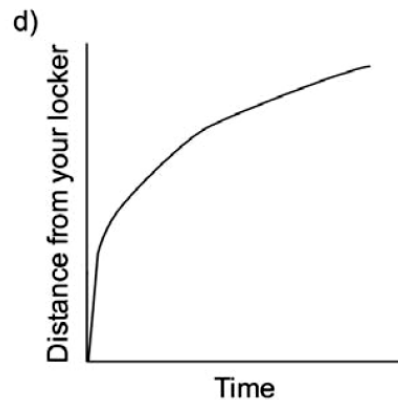
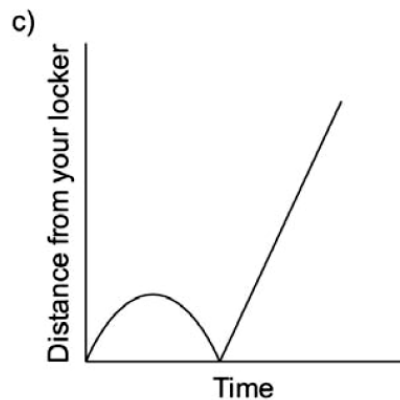
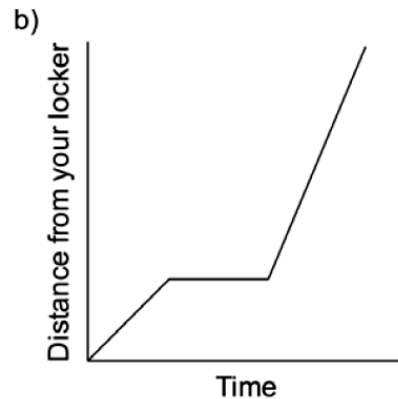
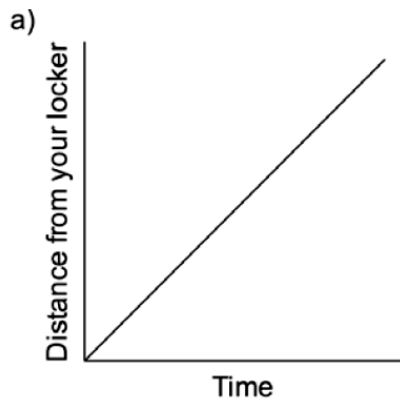
1. Below the following graphs are four stories about walking from your locker to your class. Match the graphs and the stories.

Story 1: I started to walk to class, but I realized I had forgotten my notebook, so I went back to my locker and then I went quickly at a constant rate to class.

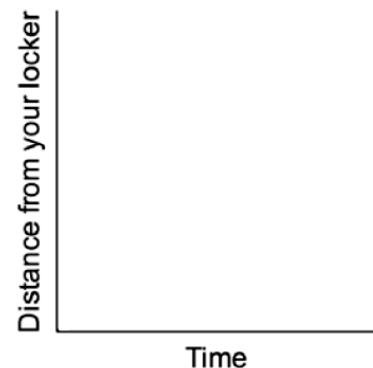
Story 2: I started walking at a steady, slow, and constant rate to my class. Then I stopped to talk to a friend for a short while. Realizing I would be late for class, I ran the rest of the way to class at a steady but faster rate.

Story 3: I was rushing to get to class when I realized I wasn't really late, so I slowed down a bit.

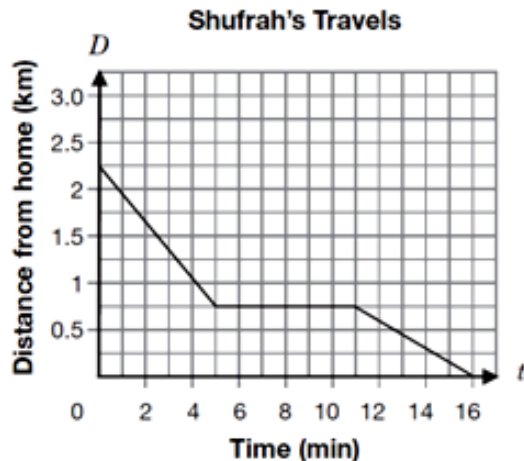
Story 4: I walked at a steady and constant rate to my class.



2. "I started walking at a steady, slow, constant rate to my class, and then, realizing I was late, I ran the rest of the way at a steady, faster rate." Draw a graph to match the above situation.

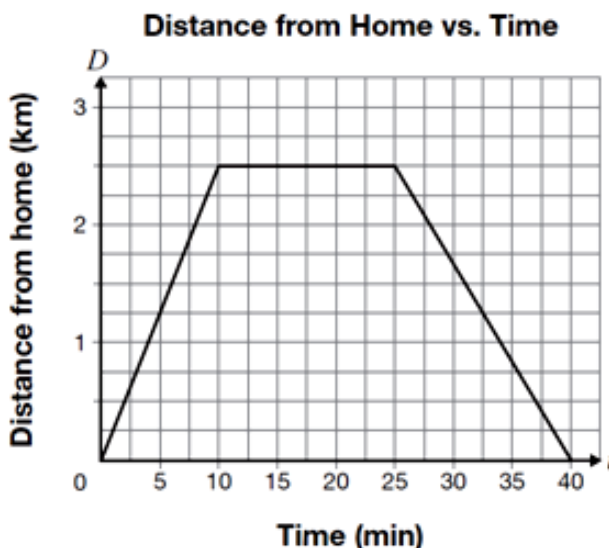


3. The relationship between t , the number of minutes Shufrah travels, and D , the distance she is from home, is shown on the grid below.



4. Oscar rides his bicycle to the beach along a straight road. While at the beach, he realizes he has forgotten his sunscreen and returns home.

The graph below shows information about his trip.



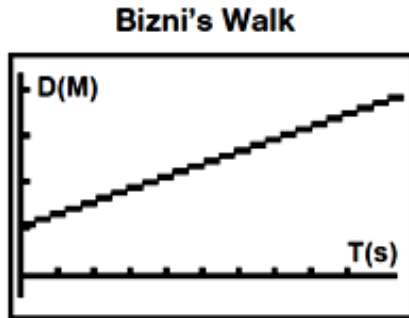
Which of the following statements best describes the way Shufrah travels?

- a While travelling toward her home, Shufrah rides her bike, stops and then walks.
- b While travelling toward her home, Shufrah rides her bike, walks and then rides her bike.
- c While travelling away from home, Shufrah rides her bike, stops and then walks.
- d While travelling away from home, Shufrah walks, rides her bike and then walks.

Which of the following is true about Oscar's trip?

- a The beach is 10 km from Oscar's home.
- b His speed riding to the beach is 0.25 km/min.
- c His speed riding home from the beach is 1.7 km/min.
- d He stays at the beach for 25 minutes before he returns home to get sunscreen.

5. Bizni is 1 m from a motion detector when he starts walking. The graph produced by the graphing calculator is shown below.



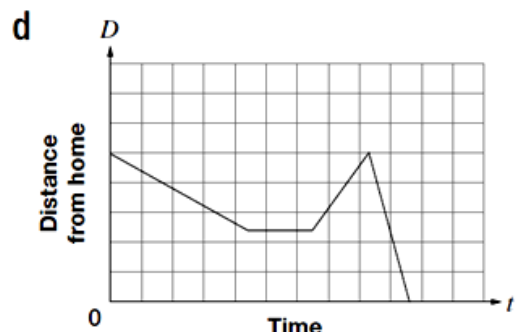
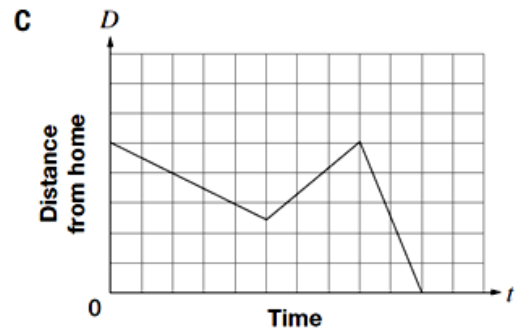
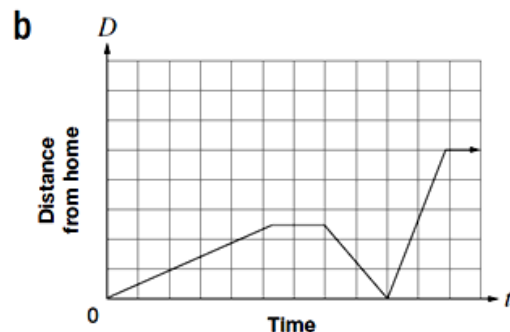
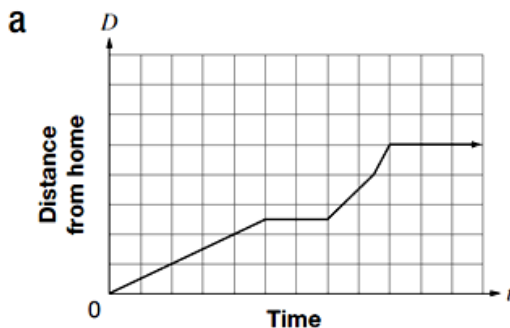
6. • Maya walks to her friend Kadeem's house, which is halfway between her home and the school.
 • They stay at Kadeem's house for a few minutes, until Maya remembers that she has forgotten her lunch.

How could Bizni change his walk to produce a graph with a negative rate of change?

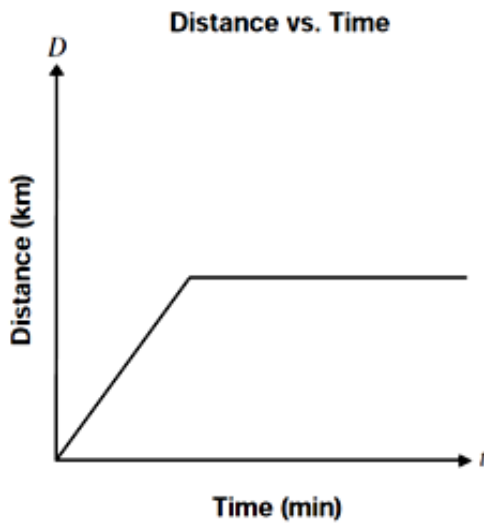
- A by walking farther away from the motion detector at a constant speed
 B by increasing his speed and walking away from the motion detector
 C by walking toward the motion detector at a constant speed
 D by jumping up and down in front of the motion detector

- Maya runs back home to get her lunch.
 • When she gets home, her mother drives her to school so that she will not be late.

Which graph most accurately represents Maya's trip to school?



7. Every day, MaryLou takes a walk.

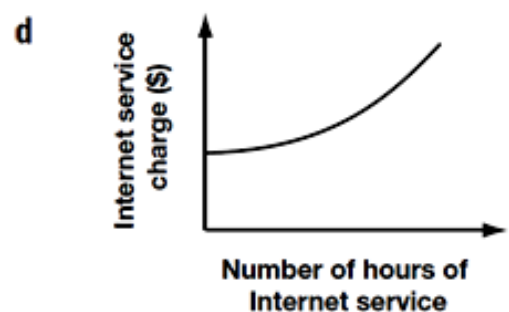
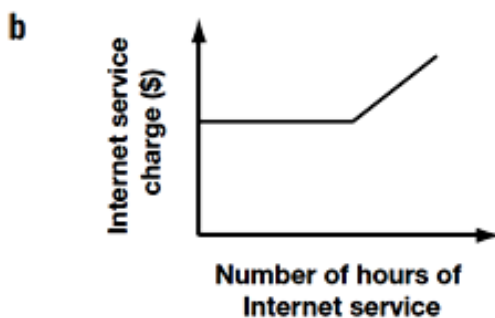
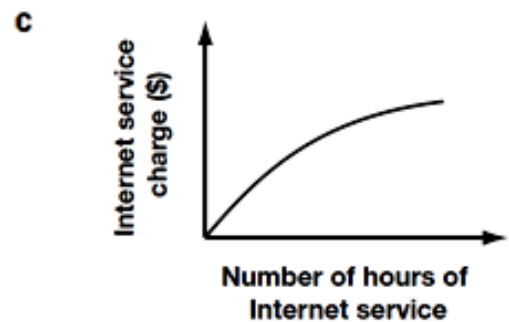
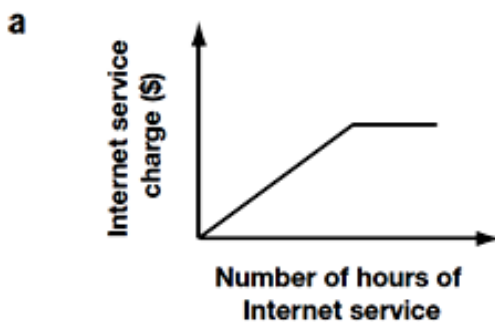


Which statement describes **her walk** as **modelled** by the graph?

- a She starts slowly, increases her speed and then walks at a constant rate.
- b She walks at a constant rate and then stops.
- c She walks at an increasing rate and then walks at a constant rate.
- d She walks at a fast constant rate and then walks at a slower constant rate.

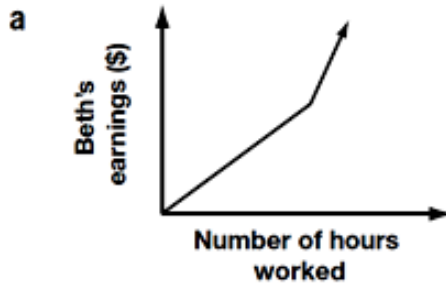
8. An Internet service provider charges \$18.00 for the first 10 h each month plus \$2.00 for each additional hour of service.

Which graph shows the relationship between total charges in a month and the number of hours of Internet service?



9. Beth works at a grocery store. She earns \$8/h for her first 20 h of work in a week. She earns \$11/h for working beyond 20 h a week.

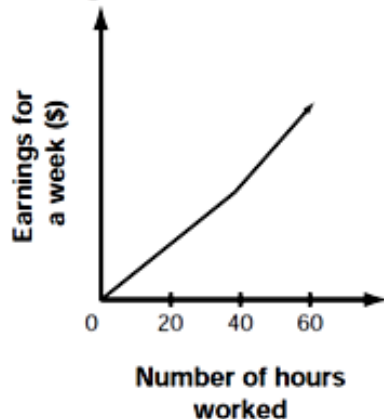
Which graph shows the relationship between Beth's earnings and the number of hours she works in a week?



10. Daniel works full-time at a restaurant. The graph shows the relationship between Daniel's earnings for a week and the number of hours worked.

Which statement best describes how Daniel's work conditions change when he works more than 40 h in the week?

Earnings vs. Number of Hours Worked



- a** He is paid a one-time bonus.
- b** He works at a faster rate.
- c** He is paid at a higher rate.
- d** He gets promoted to a higher rank.

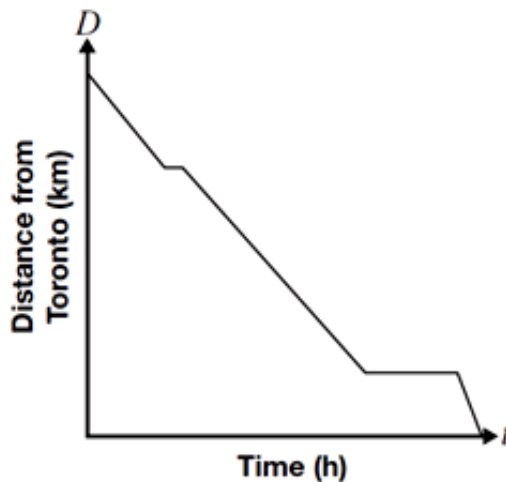
11. The following describes Ihab's drive from Windsor to Toronto:

- One hour after leaving Windsor, he stops for 15 minutes to have a snack.
- He then drives for two more hours and then stops to visit a friend for one hour.

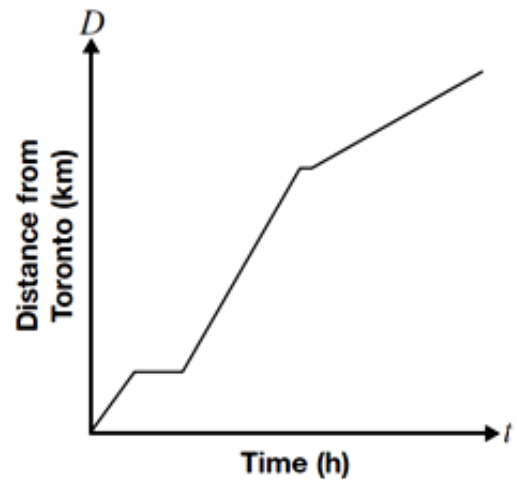
- He then completes his drive to Toronto at a faster rate than any other segment of his trip.

Which graph best describes his trip?

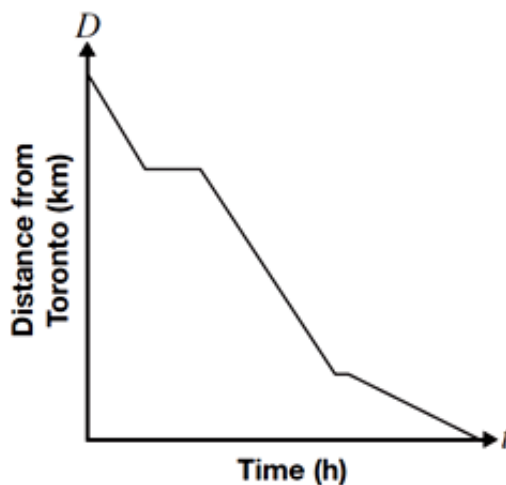
a Distance from Toronto vs. Time



c Distance from Toronto vs. Time



b Distance from Toronto vs. Time



d Distance from Toronto vs. Time

