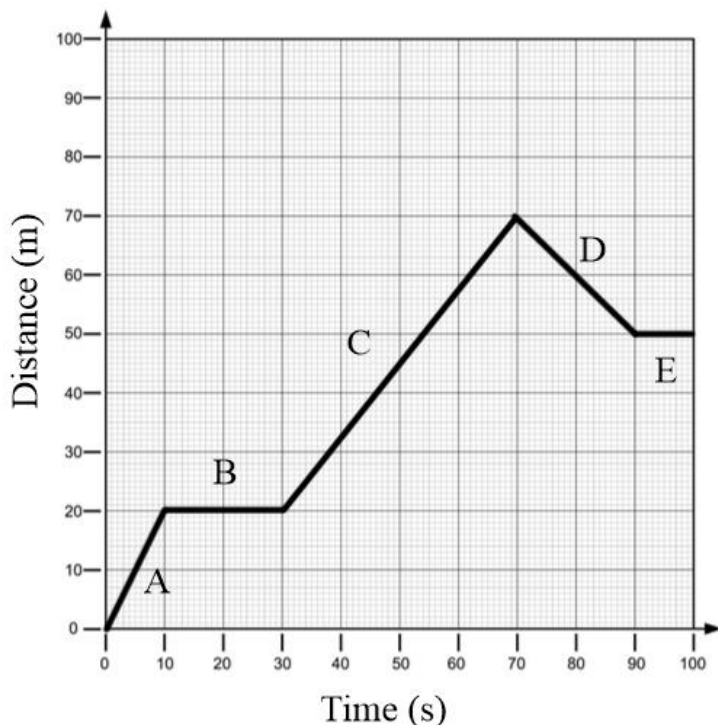


Interpreting Graphs Questions

1. Some kid brings his pet turtle to school and lets it wander around in the classroom. The turtle's movement is displayed in the graph in Figure 1.



a) Describe what is happening in each phase of the graph.

b) During which phase was the turtle moving fastest? How do you know?

c) Calculate the turtle's speed during each phase. Do your calculations match your answer in b)?

d) How far from the starting point did the turtle travel?

Figure 1 Distance traveled by a turtle

2. Match each description with one of the graphs.

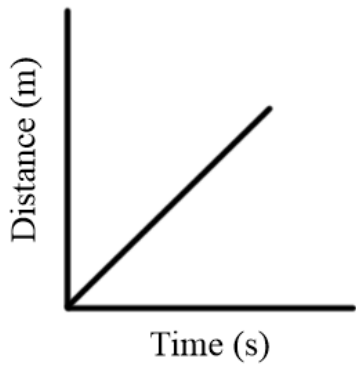
a) A fox is searching for some food at a speed of 2 m/s. It hears a noise so it stops briefly. It spots something to eat so moves toward it at 4 m/s. When it reaches the food it stops to eat it.

b) A kid runs at a constant speed.

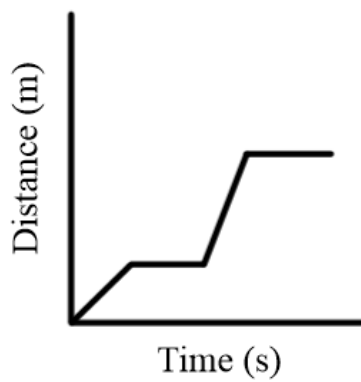
c) An eagle flies from its nest at a 4 m/s. It sees a mouse and speeds up to 9 m/s to catch it. She loses sight of the mouse so flies back to her nest at 8 m/s.

d) A Tesla Model 3 accelerates from rest.

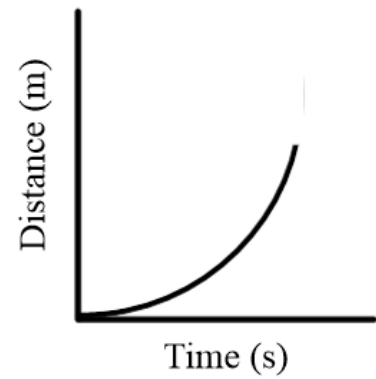
e) It's very cold in Antarctica. A penguin stays huddled with a group of penguins to stay warm.



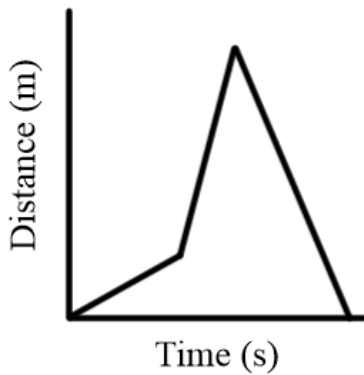
Graph 1



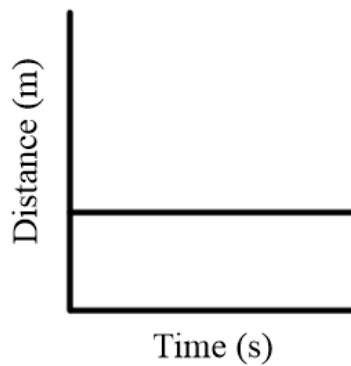
Graph 2



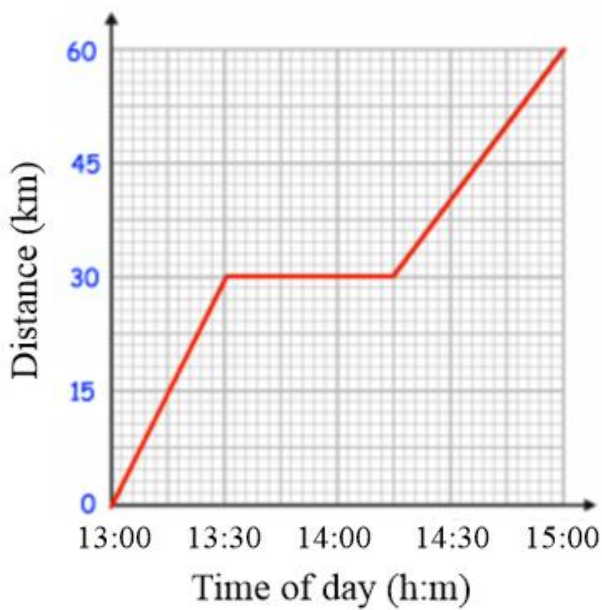
Graph 3



Graph 4



Graph 5



3. Two students have a big bowling tournament in Sussex so they have to drive to the bowling alley from school after lunch. The bowling alley is 45 km from KVHS and they stopped for lunch on the way. A graph of their trip is shown in Figure 3.

- What time did they leave?
- How far away was the restaurant where they ate?
- What was their average speed from KVHS to the restaurant?
- How long were they at the restaurant?
- What was their average speed from KVHS to the restaurant?

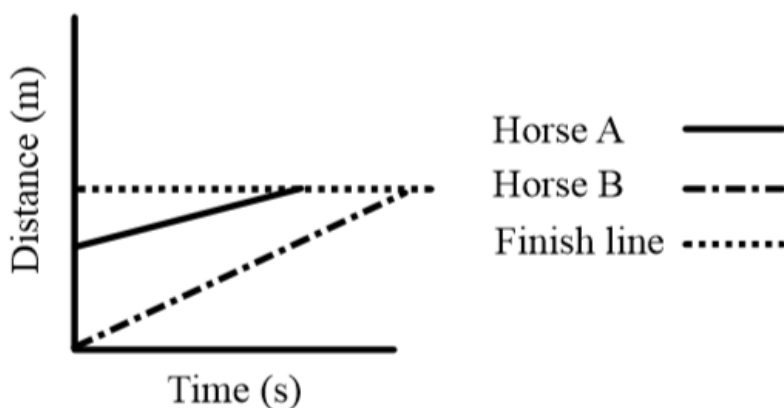
Figure 3 Distance and time of trip to Sussex

4. One day you're bored in Social Studies class, so you start watching a spider walking on the floor. You decide to draw a graph of the spider's journey, so you record its activity for a few minutes. Your observations are in Table 1. Draw a graph of the spider's motion.

Table 1 Position and time for a spider walking on the floor

Time (minutes)	Activity
1	Walked 3 cm away from starting point
2	Walked 2 cm back toward starting point
3	Walked 4 cm away from starting point
4	Stopped moving
5	Still not moving

5. Two horses have a race. The position and time of each horse is recorded in Figure 2.



- Which horse was fastest? How can you tell?
- Which horse won the race? How can you tell?
- Did the fastest horse win the race? Justify your response.
- Which horse had a head start? How can you tell?

Figure 2 Distance and time of two race horses

6. Sketch a velocity-time graph for each of the descriptions.

- A skateboard rolls across the floor, to the right, at a constant velocity.
- The same skateboard rolls across the floor, to the left, at a constant velocity.
- A kid on a sled slides down a hill, starting from rest.
- The kid is moving at 5.0 m/s when he gets to the bottom of the hill where there is a small incline.
- Some kids are making a cool Hot Wheels track for their Matchbox cars. The cars roll from right to left on a horizontal section, then down a short incline, and onto a second horizontal section.
- The kids make some changes to the track. Now the cars start from rest at the top of an incline, roll along a short horizontal section and then up a short incline to another horizontal section.
- You and some friends are cruising around on the weekend (your mom is driving). Your mom brakes for a traffic light, speeds up when the light turns green and then cruises along Hampton Road.