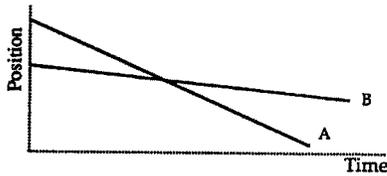


INTERPRETING MOTION GRAPHS (H)



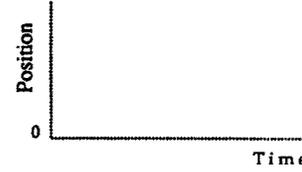
1. In the diagram above, which object is moving faster?

Sketch the position-time graph corresponding to each of the following descriptions of the motion of an object.

2. The object moves with a constant velocity away from the origin.



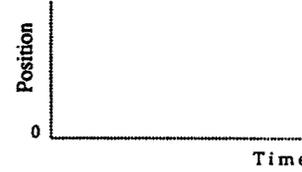
3. The object is standing still.



4. The object moves with a constant velocity toward the origin for 5 seconds and then stands still for 5 seconds.



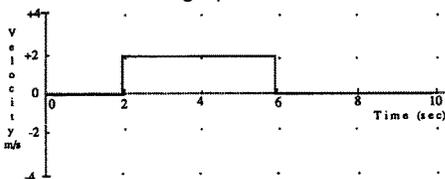
5. The object moves with a steady velocity away from the origin for 5 seconds, then reverses direction and moves at the same speed toward the origin for 5 seconds.



6. The object moves away from the origin, starting slowly and speeding up.



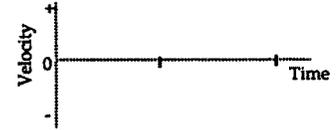
7. The velocity-time graph of an object is shown below. Describe how the object moves in the 10 second interval to make this graph.



8. Determine the displacement of the object in #7.

Sketch the velocity-time graph corresponding to each of the following descriptions of the motion of an object.

9. The object is moving away from the origin at a constant velocity.



10. The object is standing still.



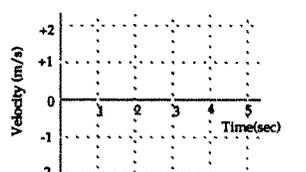
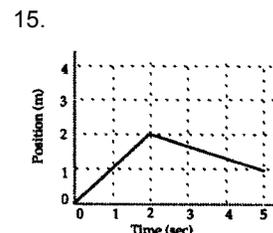
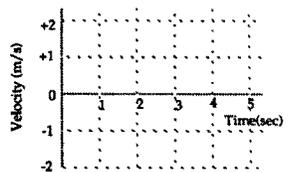
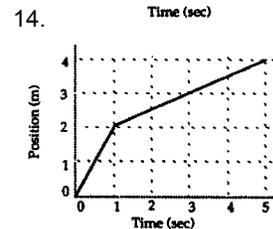
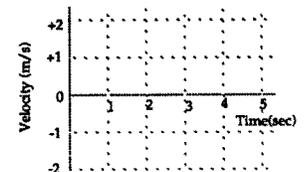
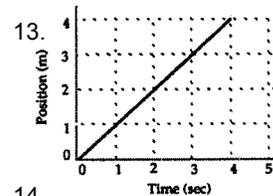
11. The object moves toward the origin at a constant velocity for 10 seconds, and then stands still for 10 seconds.



12. The object moves away from the origin at a constant velocity for 10 s, reverses direction and moves back toward the origin at the same speed for 10 s.

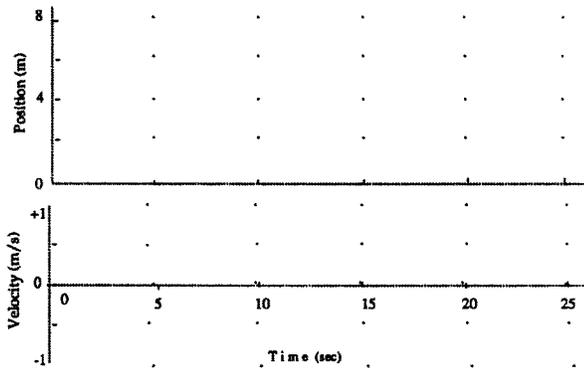


Questions 13 – 15: For the graphs shown below, draw the velocity-time graph on the right that corresponds to the position-time graph shown on the left. Unlike real objects you can assume these objects can change velocity so quickly that it looks instantaneous with this time scale.

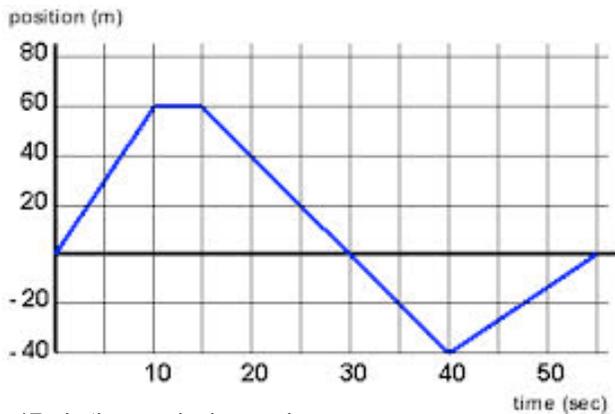


16. Draw careful graphs below of position-time and velocity-time for a cart that exhibits the following motion:

- Moves away from the origin at a slow and constant velocity for the first five seconds.
- Moves away at a medium-fast constant velocity for the next five seconds.
- Stands still for the next five seconds.
- Moves towards the origin at a slow and steady (constant) velocity for the next five seconds.
- Stands still for the last five seconds.



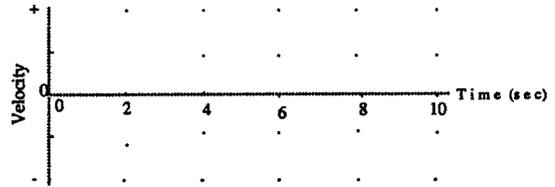
Question 17



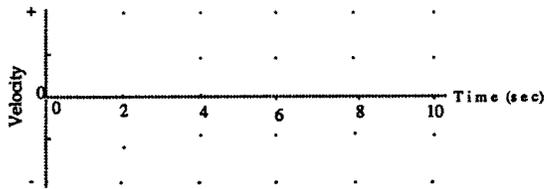
17. In the graph shown above,
- What is the object's final displacement?
 - What distance does the object travel?
 - What is the object's average speed during the first 10 seconds?
 - What is the object's speed at 25 s?
 - What is the object's velocity at 25 s?
 - How would one move to create this graph?

18. Draw the velocity graph that corresponds to the following motions: (Let away from the wall be the positive direction, towards the wall be the negative direction)

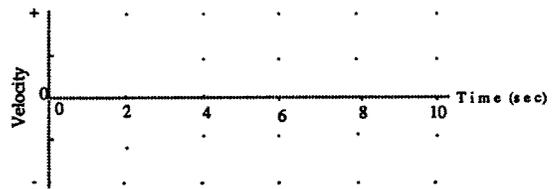
- a) Walk away from the wall at a slow constant speed.



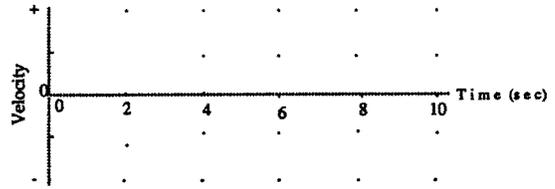
- b) Walk towards the wall at a quick constant speed.



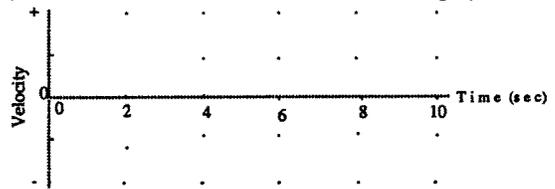
- c) Walk away from the wall at an increasing speed.



- d) Walk away from the wall at a decreasing speed.



- e) Walk towards the wall at an increasing speed.



- f) Walk towards the wall at a decreasing speed.

