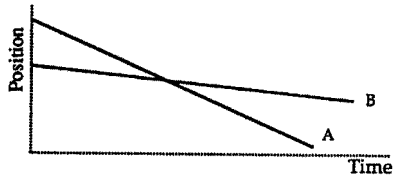


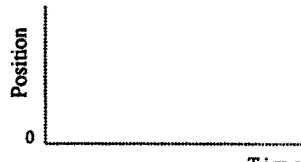
# INTERPRETING MOTION GRAPHS



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.

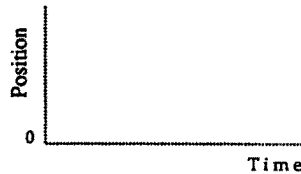
2. The object moves with a constant velocity away from the origin.



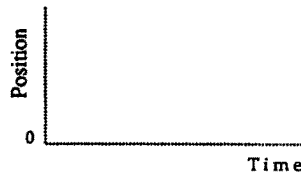
3. The object is standing still.



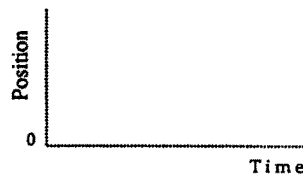
4. The object moves with a constant velocity toward the origin for 5 seconds and then stands still for 5 seconds.



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.

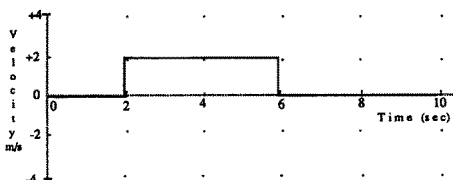


6. The object moves away from the origin, starting slowly and speeding up.



7. The velocity-time graph of an object is shown below. Determine the total change in position (displacement) of the object.

Displacement = \_\_\_\_\_

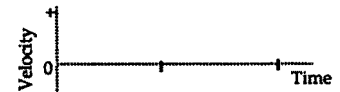


Sketch the velocity-time graph corresponding to each of the following descriptions of the motion of an object.

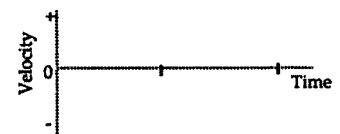
8. The object is moving away from the origin at a constant velocity.



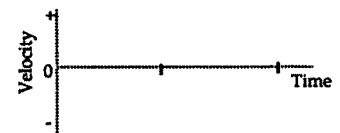
9. The object is standing still.



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

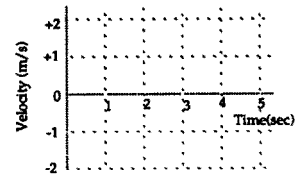
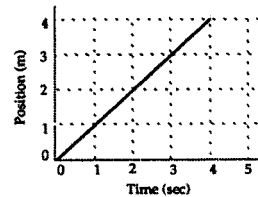


11. The object moves away from the origin at a constant velocity for 10 seconds, reverses direction and moves back toward the origin at the same speed for 10 seconds.

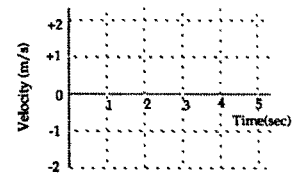
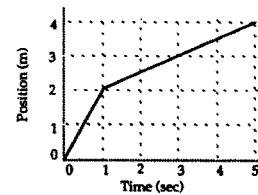


USE THESE DIRECTIONS FOR THE NEXT THREE QUESTIONS. For the graphs shown below, draw the velocity-time graph on the right that correspond to the position-time graph shown on the left. Unlike real objects you can assume these objects can change velocity so quickly that it looks instantaneous with this time scale.

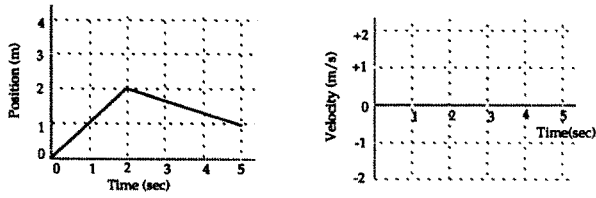
12.



13.

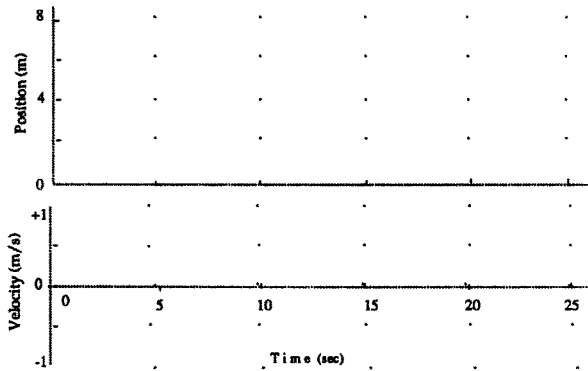


14.

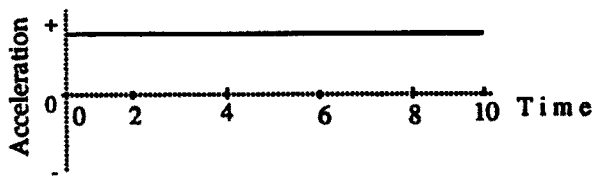


15. Draw careful graphs below of position-time and velocity-time for a cart that exhibits the following motion:

- 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 velocity for the next five seconds.
- Stands still for the last five seconds.

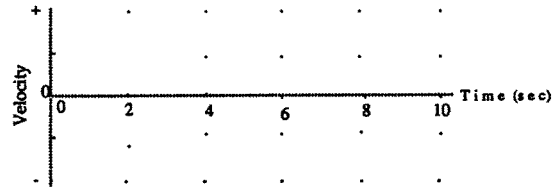


16. An object moving along a line (the + position axis) has the acceleration-time graph shown below.

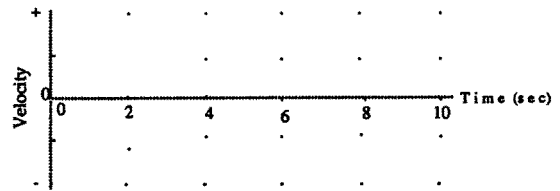


- Describe how the object might move to create this graph if it is moving away from the origin.
- Describe how the object might move to create this graph if it is moving toward the origin.

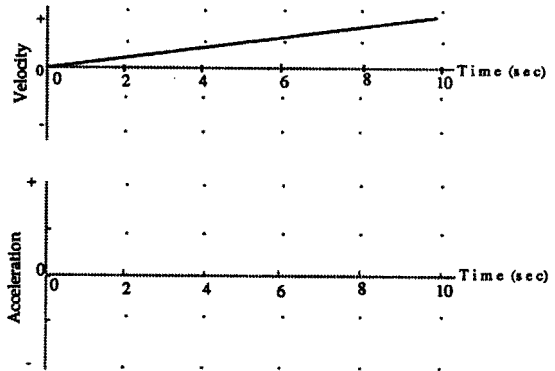
c) Sketch on the axes below a velocity-time graph that goes with the description in (a) from the previous column.



d) Sketch on the axes below a velocity-time graph that goes with the description in (b) from the previous column.



17. For the velocity-time graph below, sketch the shape of the acceleration-time graph that goes with it.



18. For the velocity-time graph below, sketch the shape of the acceleration-time graph that goes with it.

