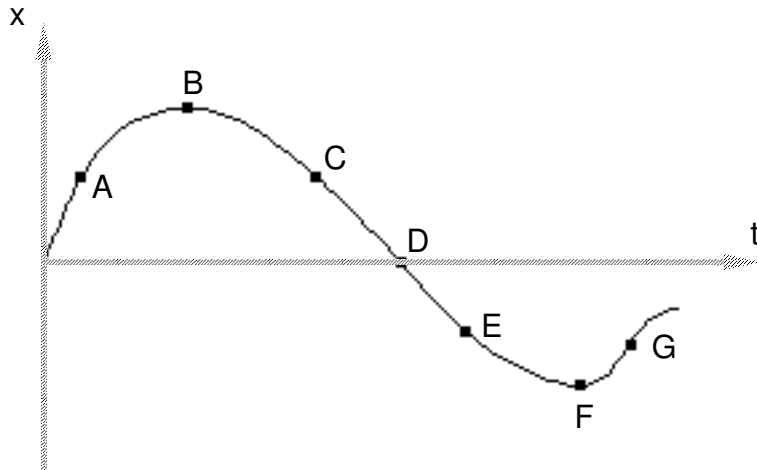


UNIT 1: WORKSHEET 8

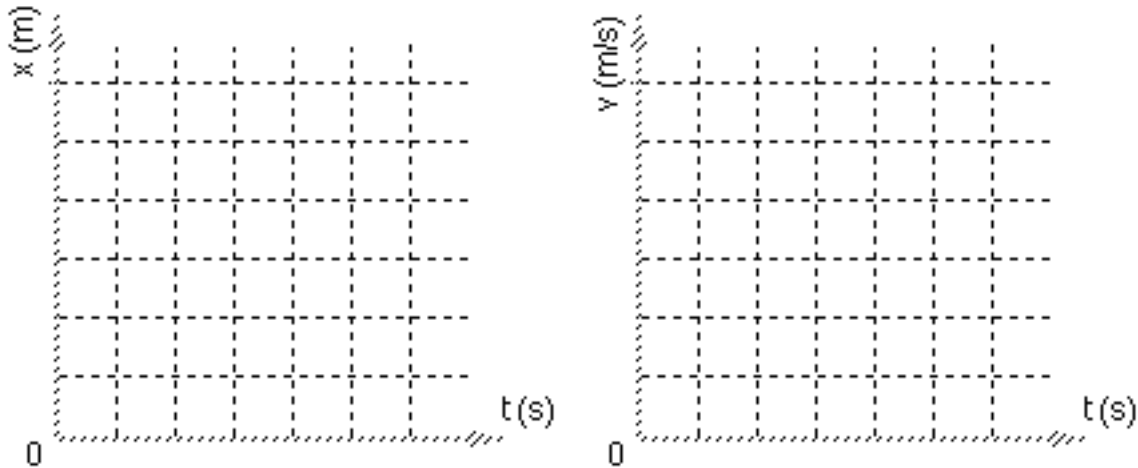
1. The graph below represents the motion of a moving object. Your answers can be given as points or segments.



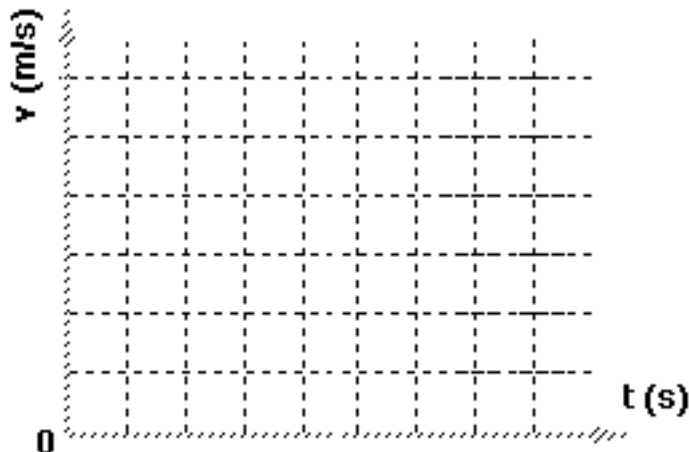
- a. At what point(s) above is the object moving most slowly? (How do you know?)
- b. Between what points above is the object speeding up? (How do you know?)
- c. Between what points above is the object slowing down? (How do you know?)
- d. At what point(s) above is the object changing direction? (How do you know?)
- e. Between what points on the graph above is the average velocity zero? (How do you know?)

2. A stunt car driver testing the use of air bags drives a car at a constant speed of 25 m/s for a total of 100. m. He applies his brake and accelerates uniformly to a stop just as he reaches a wall 50. m away.

- a. Sketch qualitative position vs. time and velocity vs time graphs.

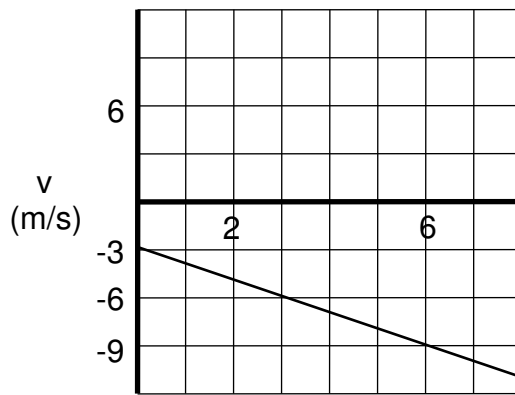


- b. How long does it take for the car to travel the first 100.m?
- c. Remember that the area under a velocity vs time graph equals the displacement of the car. How long must the brakes be applied for the car to come to a stop in 50 m?
- d. Now that you know the total time of travel, sketch a **quantitative** velocity vs time graph.



- e. What is the magnitude of the acceleration of the car? How do you know?

3. The graph below represents the motion of a moving object.



a. Give a written description of the motion.

b. Determine the displacement from $t = 0$ s to $t = 4$ s.

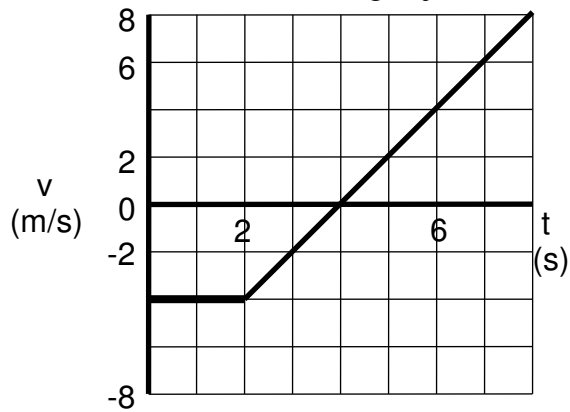
c. Determine the displacement from $t = 4$ s to $t = 8$ s.

d. Determine the average acceleration of the object's motion.

e. Sketch a possible x - t graph for the motion of the object.
 Explain why your graph is only one of many possible graphs.



4. The graph below represents the motion of a moving object.



a. Give a written description of the motion.

b. Determine the displacement from $t = 0$ s to $t = 4$ s.

c. Determine the displacement from $t = 2$ s to $t = 6$ s.

d. Determine the object's acceleration at $t = 1$ s.

e. Determine the object's acceleration at $t = 4$ s.

g. Sketch a possible x - t graph for the motion of the object.
Explain why your graph is only one of many possible graphs.

