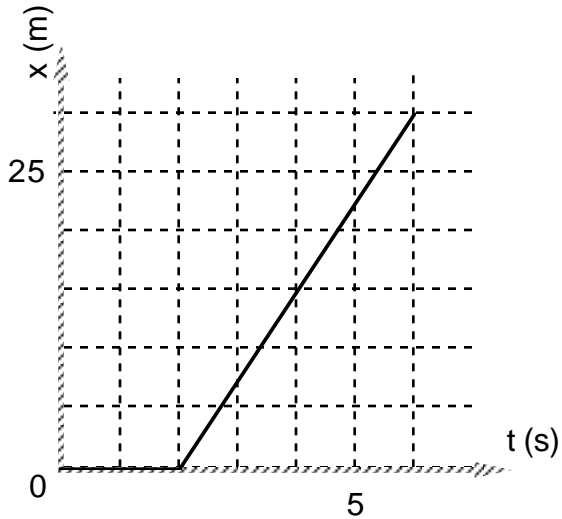


Name _____

Period _____ Date _____

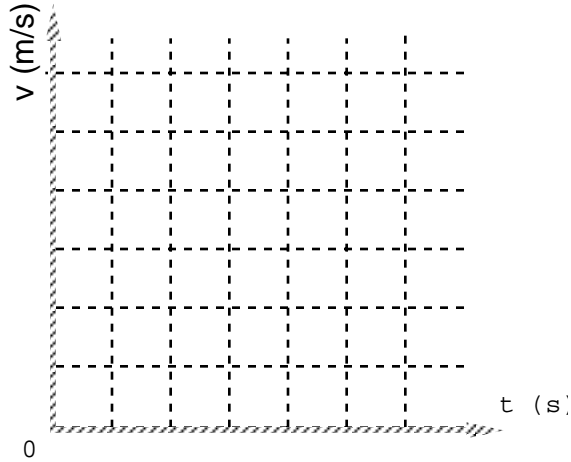
UNIT III: WORKSHEET 3

1.



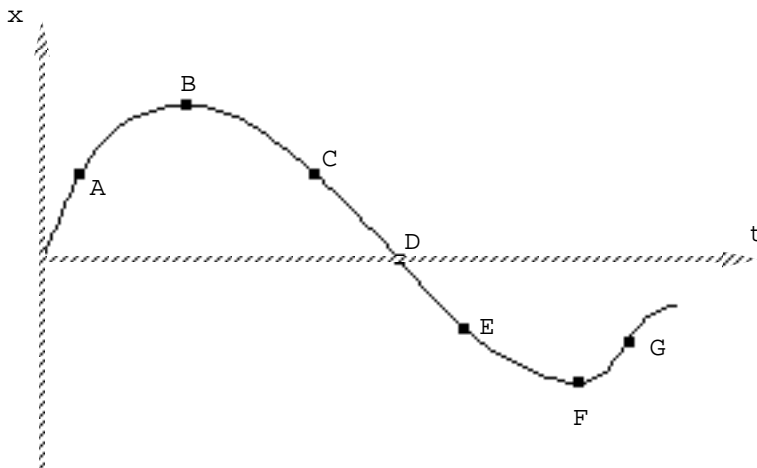
- Describe in words the motion of the object from 0 - 6.0 s.
- Construct a qualitative motion map to describe the motion of the object depicted in the graph above.
- What is the instantaneous velocity of the object at the following times?
 - $t = 1.0$ s
 - $t = 3.0$ s
- What is the simple average of these two velocities?
What is the average velocity for the entire interval?
Why are these two values different? Which is correct?

- e. Graphically represent the relationship between velocity and time for the object described above.



- f. From your velocity vs. time graph determine the total displacement of the object.

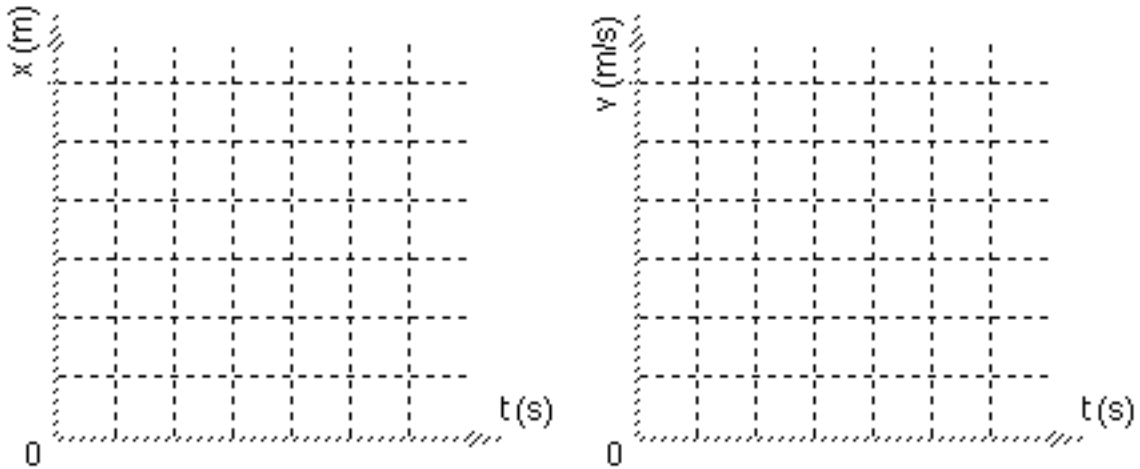
2. The graph below represents the motion of a moving object.



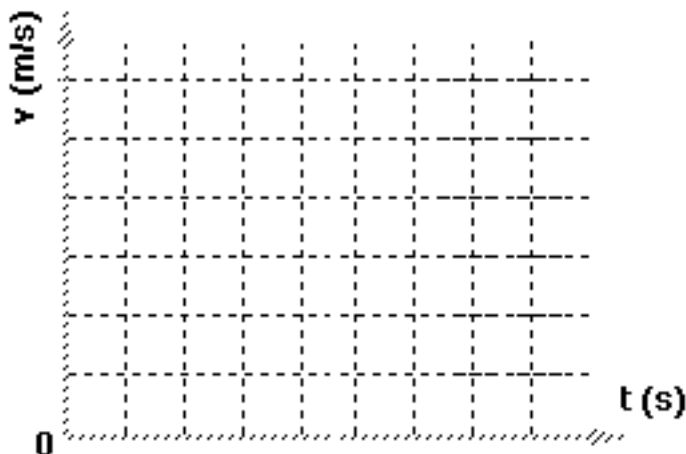
- Where on the graph above is the object moving most slowly? (How do you know?)
- Where on the graph above is the object speeding up? (How do you know?)
- Where on the graph above is the object slowing down? (How do you know?)
- Where on the graph above is the object changing direction? (How do you know?)

3. 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 acceleration is provided by the brakes? How do you know?