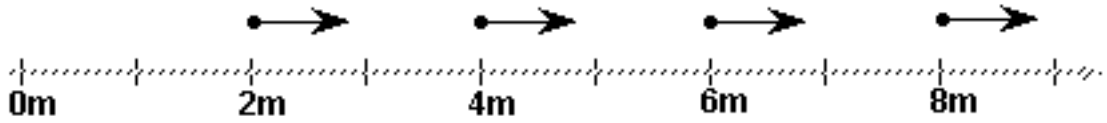
Name_____

Date_____ Pd____

Constant Velocity Model Worksheet 4:

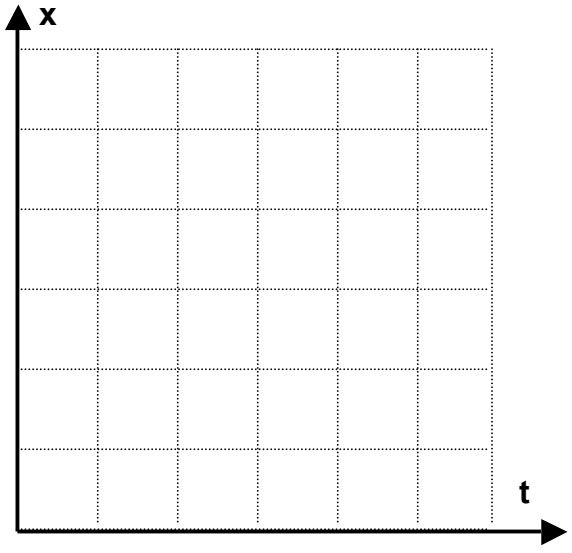
Velocity vs. Time Graphs and Displacement

1. This motion map shows the position of an object once every second. From the motion map, answer the following:

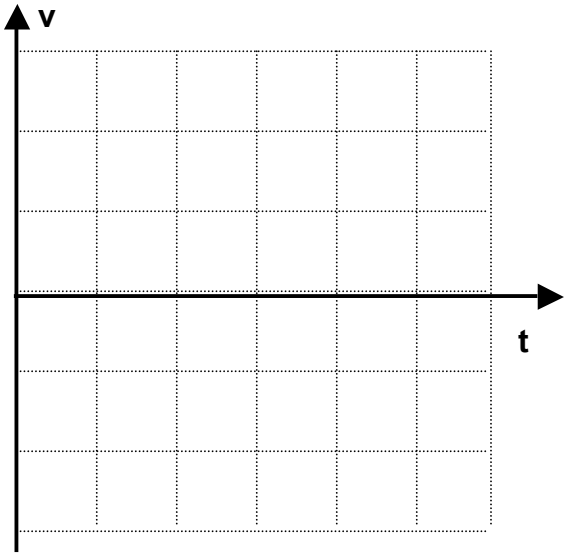


a. Describe the motion of the object.

b. Represent the motion with a quantitative **x** vs. **t** graph.



c. Represent the motion with a quantitative **v** vs. **t** graph.



d. Write a mathematical expression that represents the relationship between position and time.

e. From the position-time graph find the displacement from t = 1 s to t = 3 s.

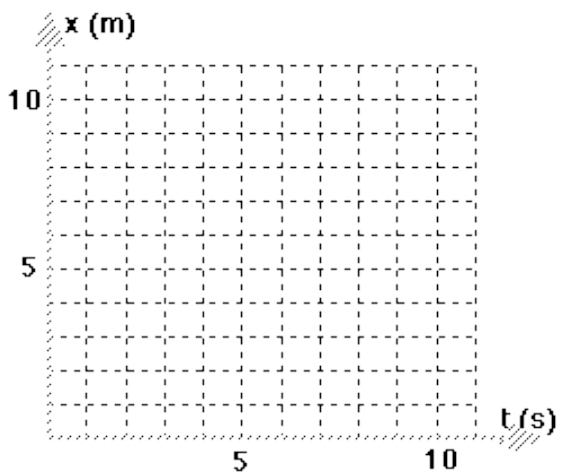
f. Find the area under the velocity-time graph from t = 1 s to t = 3 s. What are the units of this area? Describe what this area represents.

2. From the position vs. time data below, answer the following questions.

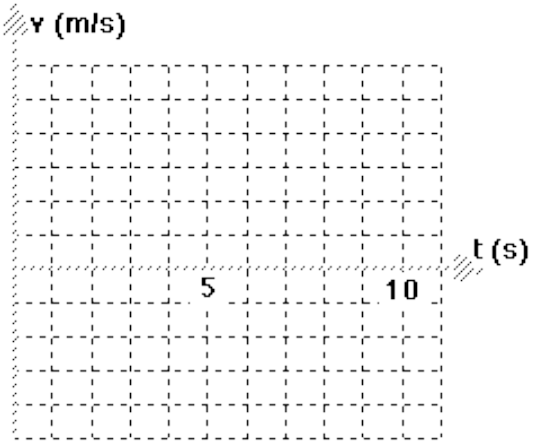
a. Construct a graph of position vs. time.

b. Construct a graph of velocity vs. time.

t (s)	x (m)
0	0
1	2
2	4
3	4
4	7
5	10
6	10
7	10
8	5
9	0

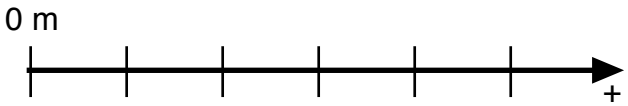


(A)



(B)

c. Draw a motion map for the object.



d. Determine the displacement from t = 3.0s to 5.0s using the velocity vs. time graph.

e. Determine the displacement from t = 7.0 s to 9.0 s using the velocity vs. time graph.

f. Determine the average **velocity** from t = 4 s to 8 s.

g. Determine the average **speed** from t = 4 s to 8 s.