Name_____

Date_____ Pd____

Constant Velocity Particle Model Ultrasonic Motion Detector Lab:

Multiple Representations of Motion

Do the following for each of the situations below:

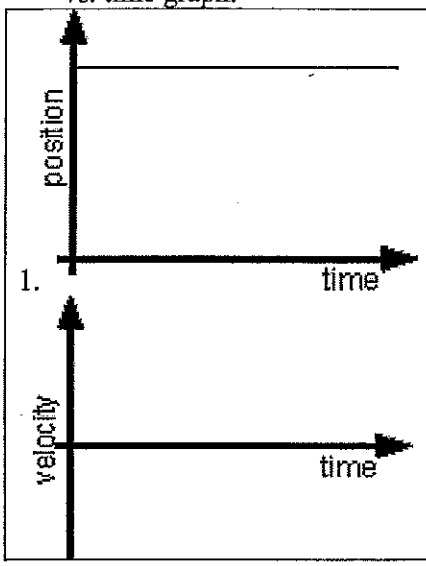
a. Move, relative to the motion detector, so that you produce a position vs. time graph that closely approximates the graph shown.

b. In the space provided, describe how you must move in order to produce the position vs. time graph shown in the space to the right of the velocity vs. time graph. Be sure to include each of the following in your description: starting position, direction moved, type of motion, relative speed.

c. On the velocity vs. time axes, sketch the velocity vs. time graph that corresponds to the position vs. time graph shown.

d. In the space provided, sketch the motion map that corresponds to the motion described in the position vs. time graph.

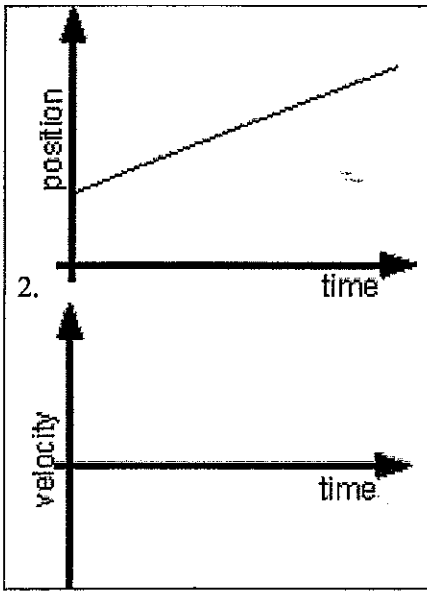
1.



Written Description:

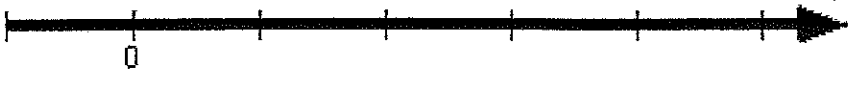
Motion Map:

2.

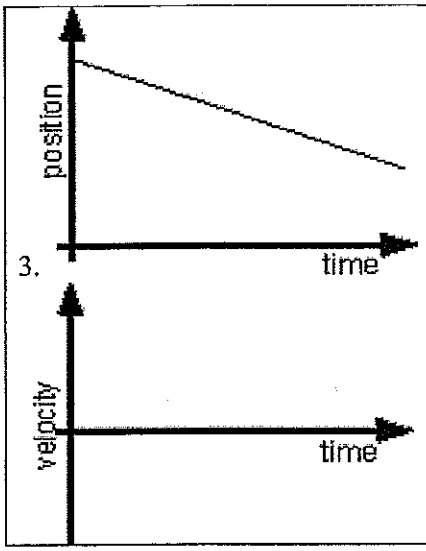


Written Description:

Motion Map:



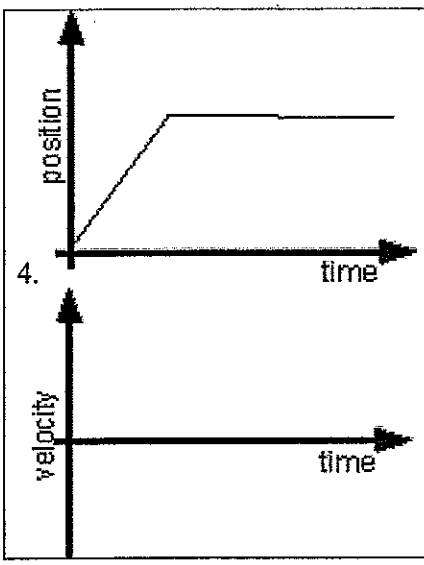
3.



Written Description:

Motion Map:

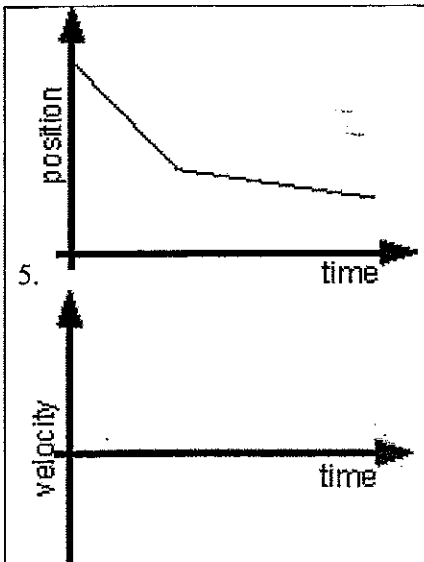
4.



Written Description:

Motion Map:

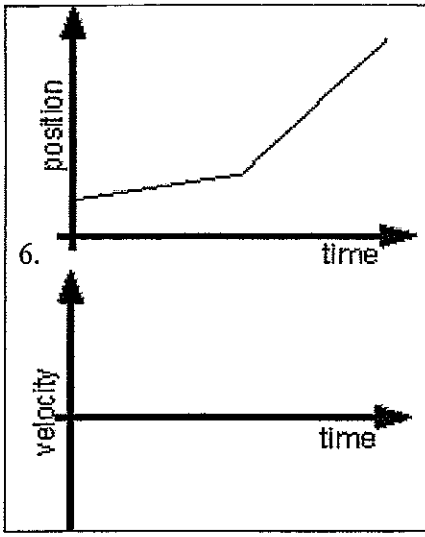
5.



Written Description:

Motion Map:

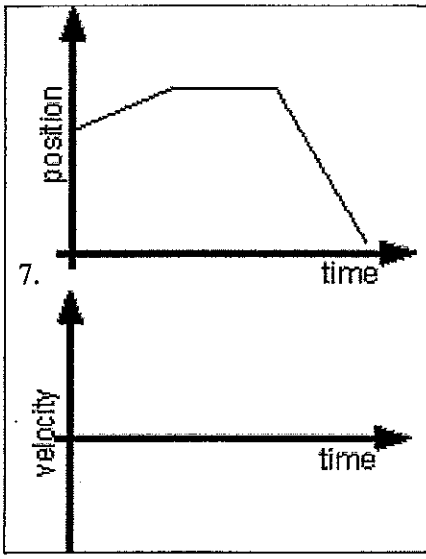
6.



Written Description:

Motion Map:

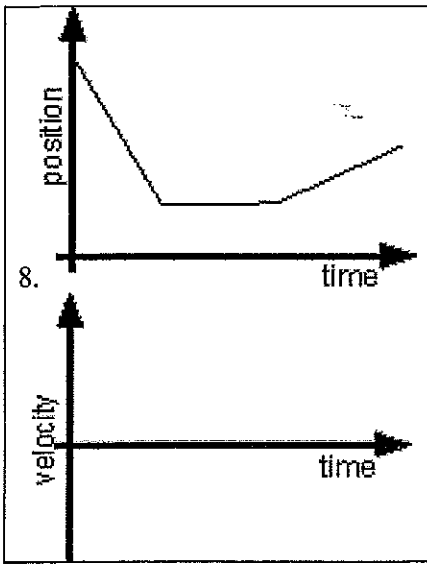
7.



Written Description:

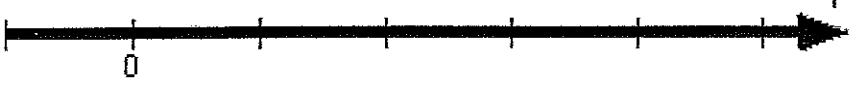
Motion Map:

8.



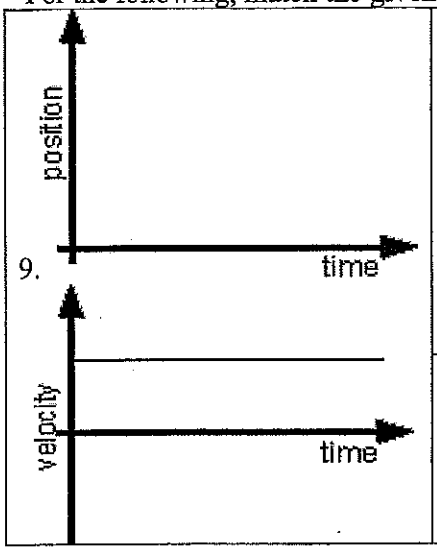
Written Description:

Motion Map:



For the following, match the given velocity-time graph.

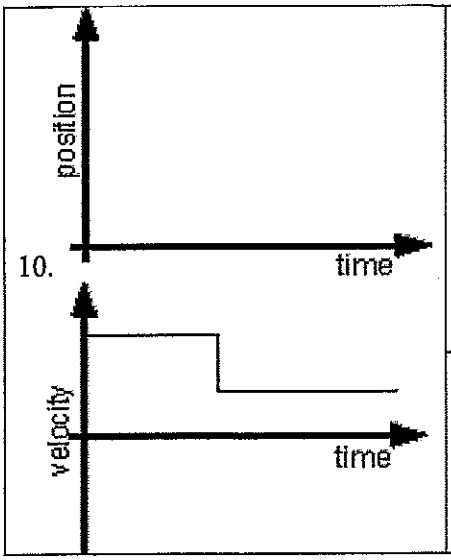
9.



Written Description:

Motion Map:

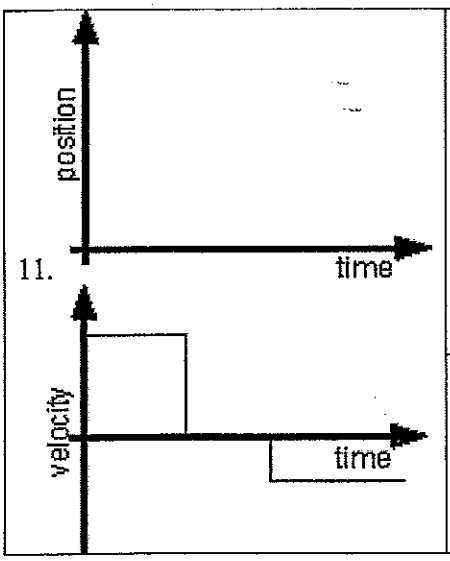
10.



Written Description:

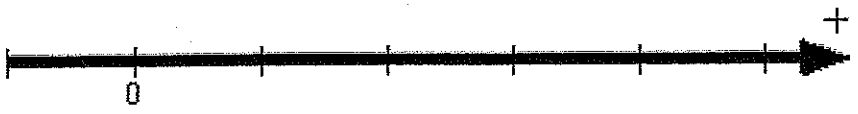
Motion Map:

11.

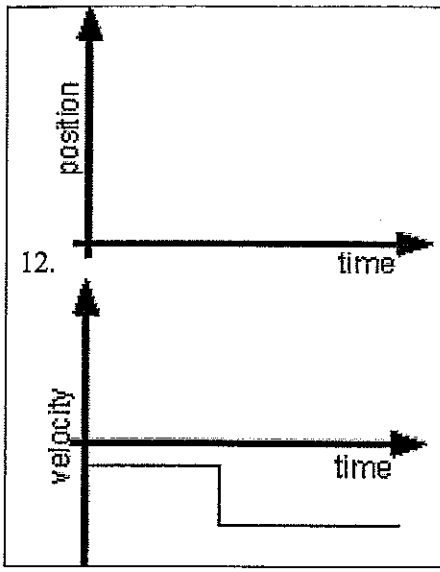


Written Description:

Motion Map:



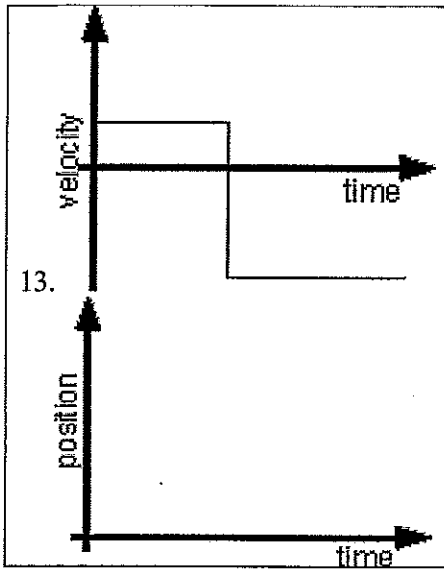
12.



Written Description:

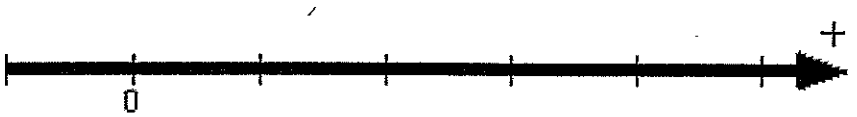
Motion Map:

13.



Written Description:

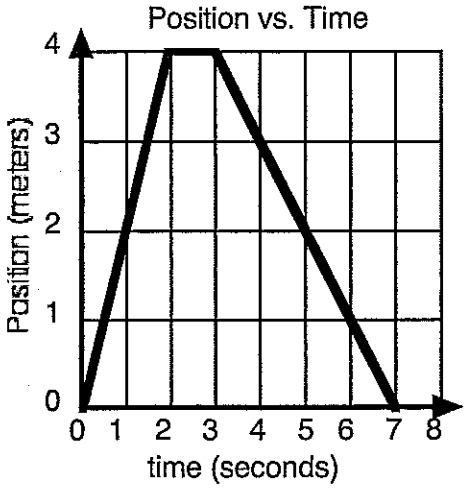
Motion Map:

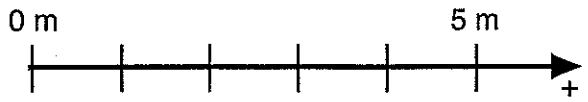


Constant Velocity Particle Model Worksheet 1:

Motion Maps and Position vs. Time Graphs

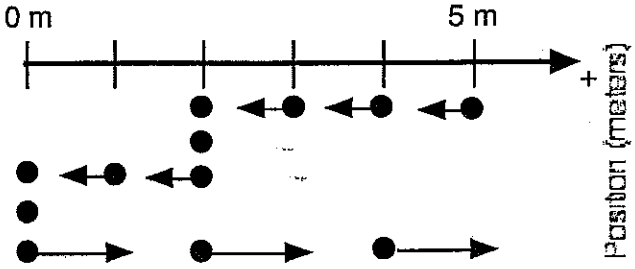
1. Given the following position vs. time graph, draw a motion map with one dot for each second.

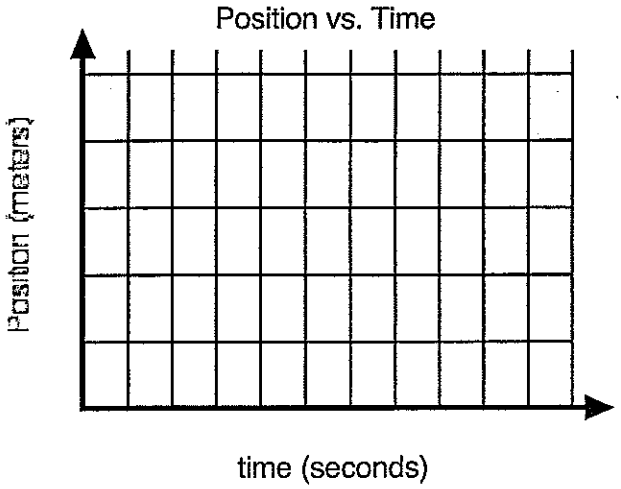




Describe the motion of the object in words:

2. Given the following motion map, where positions have been recorded with one dot each second, draw a position vs. time graph.





Describe the motion of the object in words: