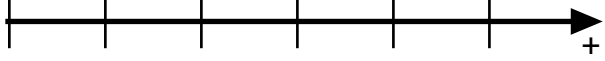
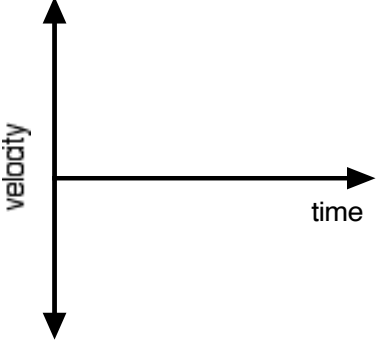
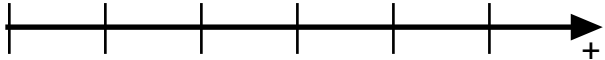
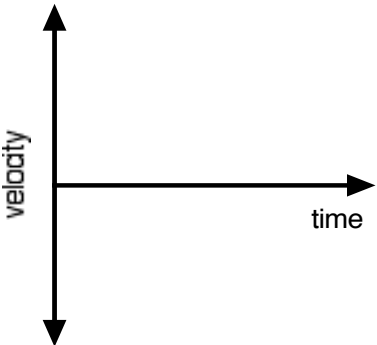
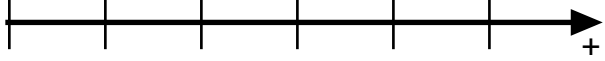
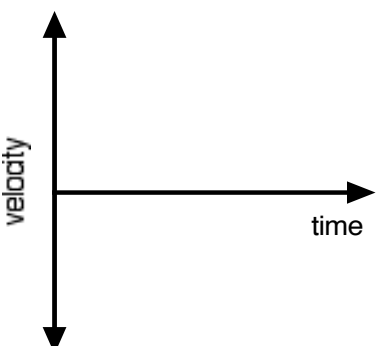

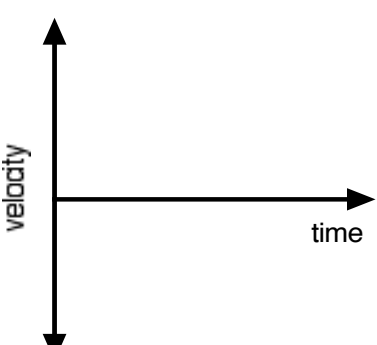


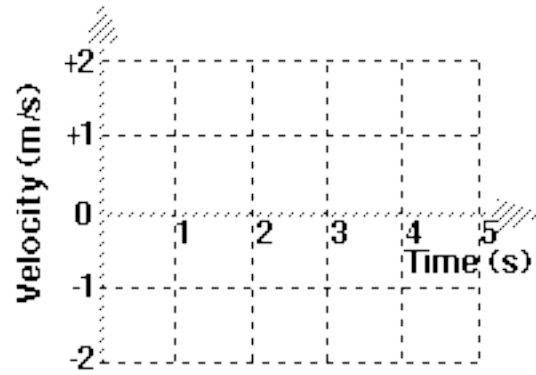
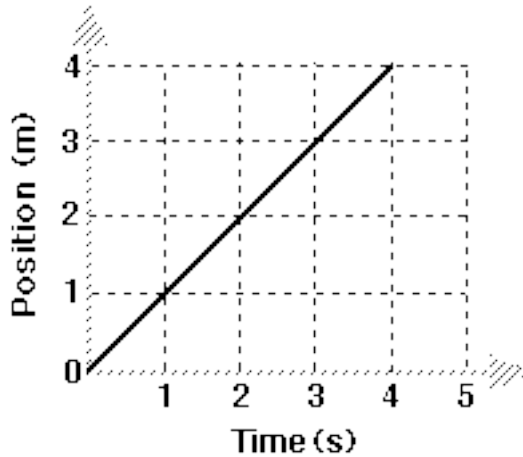
Constant Velocity Particle Model Worksheet 2: Motion Maps and Velocity vs. Time Graphs

Sketch **velocity vs. time** graphs and **motion maps** corresponding to the following descriptions of the motion of an object.

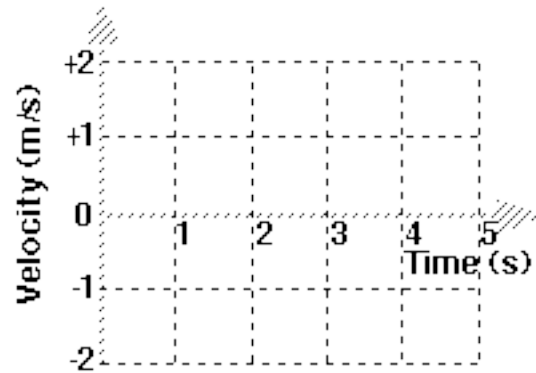
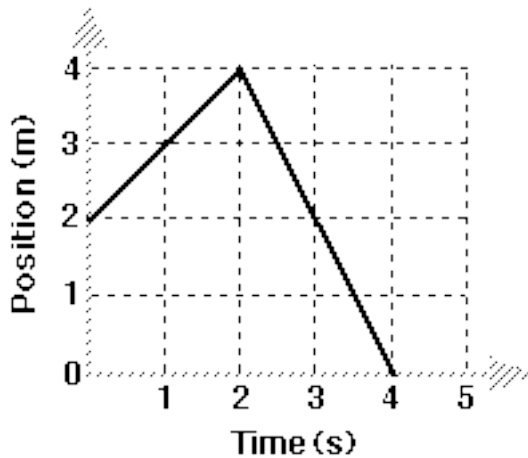
| | |
|---|--|
| <p>1. The object is moving in the positive direction at a constant (steady) speed.</p> <p>Motion Map: 0 m</p>  |  |
| <p>2. The object is standing still.</p> <p>Motion Map: 0 m</p>  |  |
| <p>3. The object moves in the negative direction at a steady speed for 10s, then stands still for 10s.</p> <p>Motion Map: 0 m</p>  |  |
| <p>4. The object moves in the positive direction at a steady speed for 10s, reverses direction and moves back toward the negative direction at the same speed.</p> <p>Motion Map: 0 m</p>  |  |

Draw the velocity vs time graphs for an object whose motion produced the position vs time graphs shown below at left.

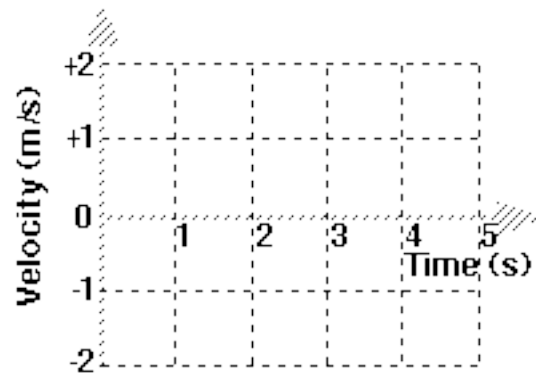
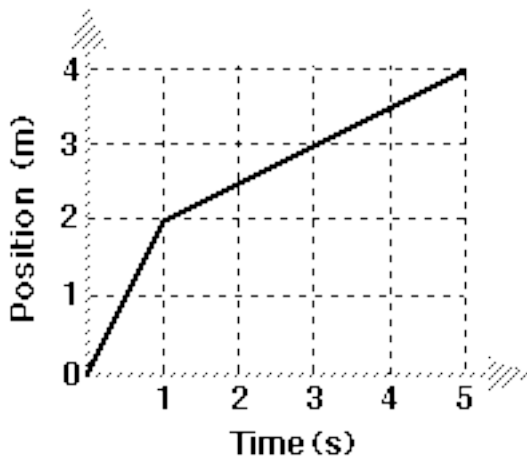
5.



6.



7.



8. For many graphs, both the **slope** of the line and the **area** between the line and the horizontal axis have physical meanings.

a. What does the slope of a position time graph tell you about the motion of an object?

b. Looking at the velocity time graphs, determine the units for a square of area on the graph.

c. What does the area "under the velocity-time graph" tell you about the motion of an object?