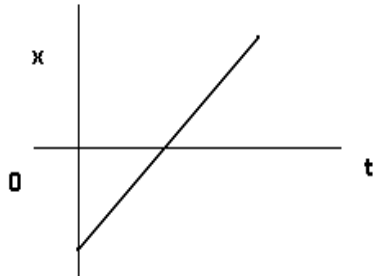
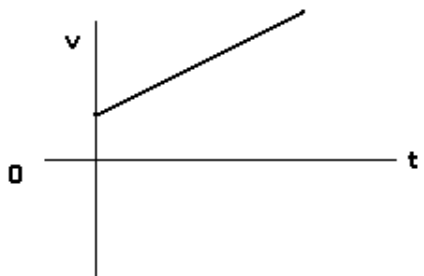
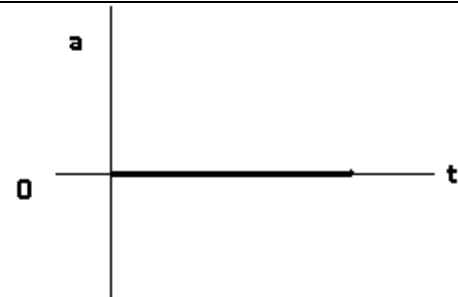


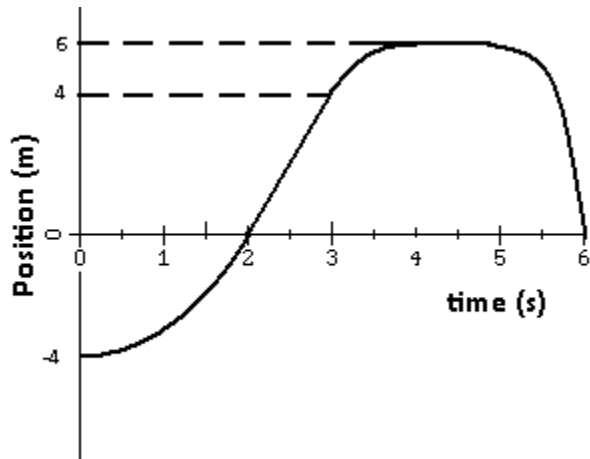
Motion graphing practice packet

Name: _____

Summary of Motion (So Far...)

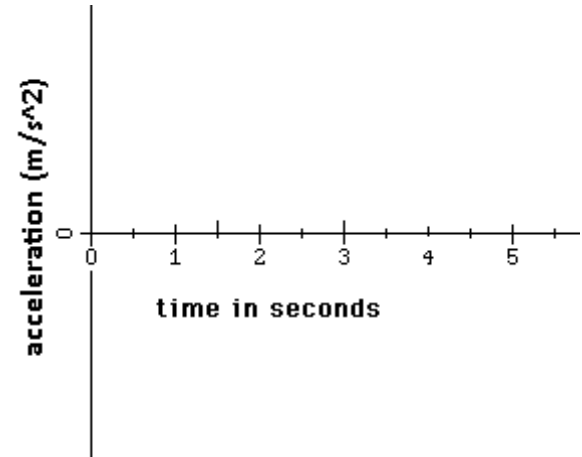
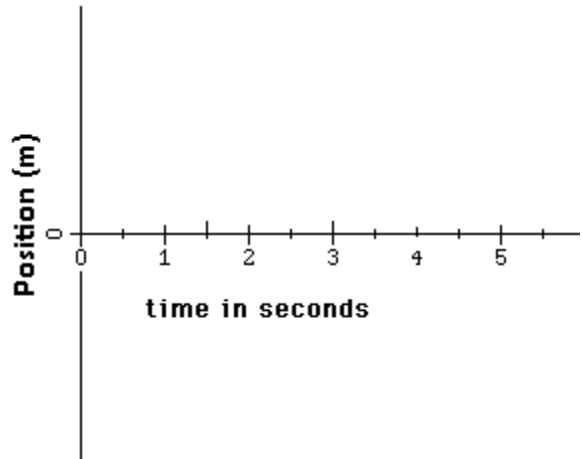
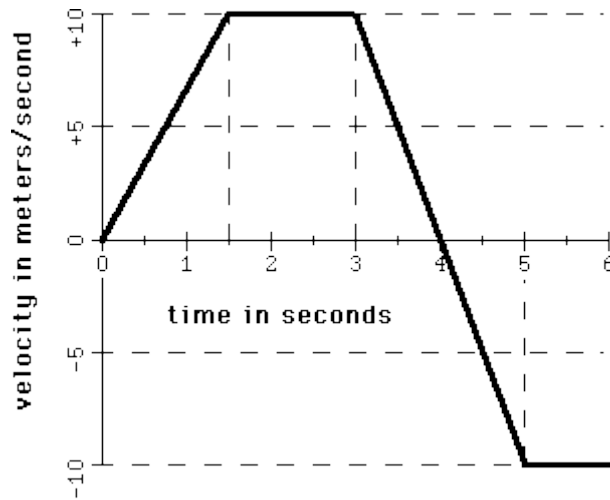
Describe the motion	Motion with constant velocity	Motion with constant acceleration
In words, provide an example		The object's velocity is increasing by the same amount every second- for example a ball rolling down a smooth track tilted at an angle.
Draw a x-t graph		
Mathematical equation of x(t)		

Describe the motion	Motion with constant velocity	Motion with constant acceleration
With a v-t graph		
Mathematical equation of v(t)		
Draw an a-t graph		
Mathematical equation of a(t)		



1. Find the average velocity between 3 and 4 seconds.
2. Show how you would find the instantaneous velocity at 2 seconds.
3. List the region(s) where the velocity is positive.
4. List the region(s) where the velocity is negative.
5. List the region(s) where the object is speeding up.
6. List the region(s) where the object is slowing down.
7. List the region(s) where the object is not moving.
8. List the region(s) where the acceleration is positive.
9. List the region(s) where the acceleration is negative.

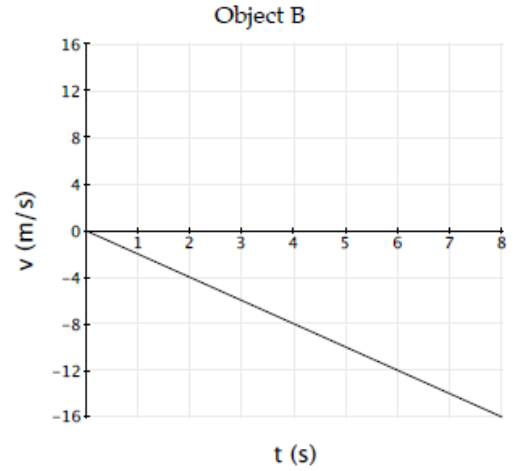
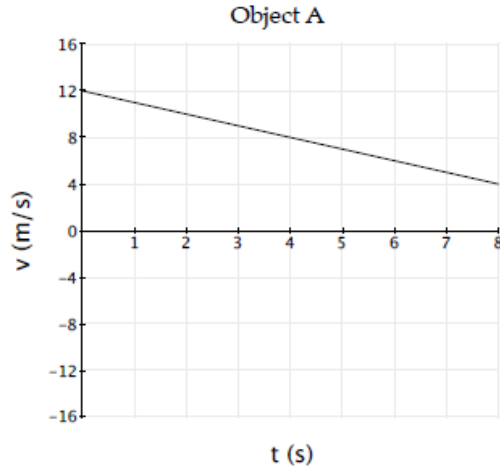
Additional Problems: Motion Graphs



1. Above, draw the x-t graph.
2. Right, draw the a-t graph.
3. List all the region(s) where the object is speeding up.
4. List all the region(s) where the object is slowing down.
5. At the beginning which way is the object moving?
6. List the region(s) where the acceleration is in the positive direction.
7. List the region(s) where the acceleration is in the negative direction.
8. List the region(s) where the object has no acceleration.
9. What time(s) is the object at rest?
10. What is the displacement of the object over the first 4 seconds? Over the entire 6 seconds?

Graphs of Motion with Changing Velocity

1. Consider the velocity-vs-time graphs and describe the motion of the objects.

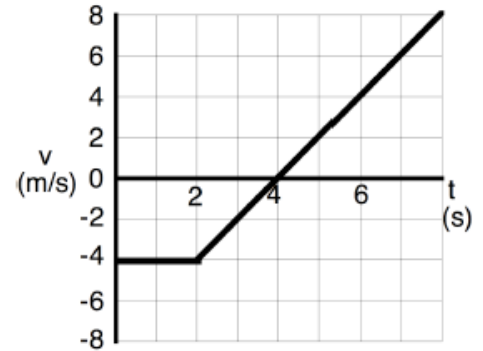


<p>Determine the displacement between 4 and 8 seconds. Show work!</p>		
<p>Determine the average acceleration during the first 3 seconds. Show work!</p>		
<p>Describe the motion in words.</p>		
<p>Sketch a motion map. Be sure to include both velocity and acceleration vectors.</p>		

2. Use the velocity-vs-time graph to analyze the motion of the object.

a. Give a written description of the motion.

b. Sketch a motion map. Be sure to include both velocity and acceleration vectors.



c. Determine the displacement of the object from $t = 0$ s to $t = 4$ s.

d. Determine the displacement of the object from $t = 4$ s to $t = 8$ s.

e. Determine the displacement of the object from $t = 2$ s to $t = 6$ s.

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

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