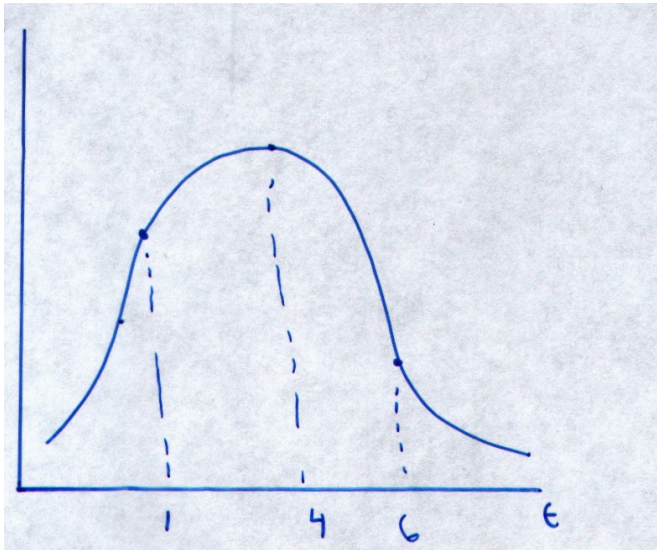


Name \_\_\_\_\_

Rectilinear Motion Class Work Assignment

- 1) Given  $s(t) = t^3 - 6t^2$ 
  - a. Find the maximum velocity of the particle during the time interval  $1 \leq t \leq 3$
  - b. When is the particle furthest from the origin? What is its position at this instant?

- 2) Describe the motion of the particle represented in the graph below:



- 3) Describe the motion of the particle and make a 1-dimensional sketch.  
 $s(t) = t^3 - 6t^2 + 9t + 1$

- 4) Given the position function for two particles below:

Particle 1

Particle 2

$$s(t) = \frac{1}{2}t^2 - t + 3$$

$$s(t) = -\frac{1}{4}t^2 + t + 1$$

- a. Given the position function for two particles above, sketch position graphs for both.
- b. Do particle 1 and particle 2 ever collide?
- c. If yes, what time? If no, how close do they get to each other?
- d. What intervals of time are they moving in opposite directions?