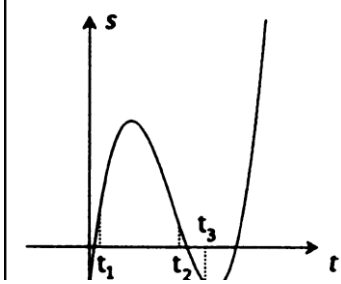


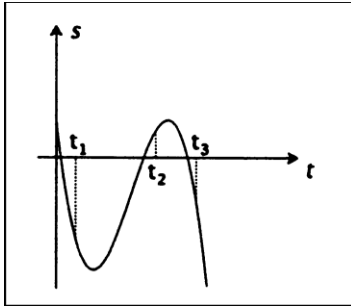
Rectilinear Motion Practice**Section 5.4**

The graphs below depict the position function of a particle moving on a coordinate line at three different times. For each time specify whether the particle is moving to the left or right and whether or not it is speeding up or slowing down.

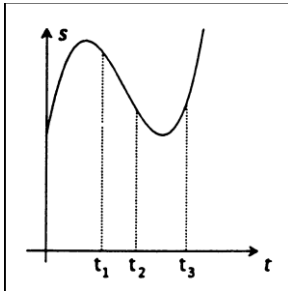
1.



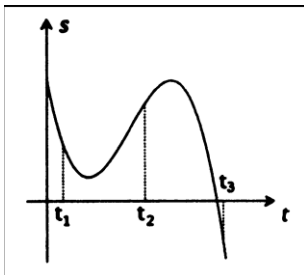
2.



3.



4.



Rectilinear Motion Practice**Section 5.4**

5. The position function of a particle in rectilinear motion is given by
 $s = 3t^2 - 4t + 1$ for $t \geq 0$.
- Find the velocity function.
 - Find the acceleration function.
 - When is the particle stopped?
 - When is the particle speeding up/slowing down?
 - What is the total distance covered by the particle from $t = 0$ to $t = 5$?
6. The position function of a particle in rectilinear motion is given by
 $s = 2t^3 - 9t^2 + 12t + 5$ for $t \geq 0$.
- Find the velocity function.
 - Find the acceleration function.
 - When is the particle stopped?
 - When is the particle speeding up/slowing down?
 - What is the total distance covered by the particle from $t = 0$ to $t = 5$?
7. The position function of a particle in rectilinear motion is given by
 $s = 4t^3 - 12t^2 + 9t - 1$ for $t \geq 0$.
- Find the velocity function.
 - Find the acceleration function.
 - When is the particle stopped?
 - When is the particle speeding up/slowing down?

Rectilinear Motion Practice
Section 5.4

- e) What is the total distance covered by the particle from $t = 0$ to $t = 5$?
8. The position function of a particle in rectilinear motion is given by $s = t^3 - 3t^2 - 9t$ for $t > 0$.
- a) Find the velocity function.
 - b) Find the acceleration function.
 - c) When is the particle stopped?
 - d) When is the particle speeding up/slowing down?
 - e) What is the total distance covered by the particle from $t = 0$ to $t = 5$?
9. The position function of a particle in rectilinear motion is given by $s = 2t^3 - 5t^2 + 4t - 3$ for $t \geq 0$.
- a) Find the velocity function.
 - b) Find the acceleration function.
 - c) When is the particle stopped?
 - d) When is the particle speeding up/slowing down?
 - e) What is the total distance covered by the particle from $t = 0$ to $t = 5$?