

Keeper 4.3 Virtual Problems – Particle Motion

1. $s(t) = 2t^3 - 14t^2 + 22t - 5$ in $[0,6]$

- a) Find the velocity at time t .
- b) What is the velocity after 2 seconds?
- c) Find the acceleration as a function of time t .
- d) Find the acceleration at $t=3$ seconds.
- e) When is the particle at rest?
- f) When is the particle moving forward (or right)?
- g) What is the displacement on $[0,5]$ seconds?
- h) Find the total distance traveled on $[0,5]$.
- i) Find the velocity when acceleration is $24 \frac{m}{second^2}$
- j) Find when the particle is speeding up and slowing down.