

3.3-Rates of Change

Recall: The derivative of a function can measure:

Position/Velocity/Acceleration

Example:

A particle moves in a line according to the function $s = f(t) = t^3 + 3t^2 - 24t + 5$, where t is in seconds and s is in feet.

- a) Find the velocity at time t
- b) What is the position and velocity after 3 seconds?
- c) When is the particle at rest?
- d) Find the total distance traveled in the first 3 seconds.

On Your Own: #3, 7, 9, 11, 13, 17, 23