

Name: _____
AP Calc AB: Linear Motion

Date: _____
Ms. Loughran

1990 BC 1

A particle starts at time $t = 0$ and moves along the x -axis so that its position at any time $t \geq 0$ is given by $x(t) = (t-1)^3(2t-3)$.

- (a) Find the velocity of the particle at any time $t \geq 0$.
- (b) For what values of t is the velocity of the particle less than zero?
- (c) Find the value of t when the particle is moving and the acceleration is zero.

1993 AB 2

A particle moves on the x -axis so that its position at any time $t \geq 0$ is given by $x(t) = 2te^{-t}$.

- (a) Find the acceleration of the particle at $t = 0$.
- (b) Find the velocity of the particle when its acceleration is 0.
- (c) Find the total distance traveled by the particle from $t = 0$ to $t = 5$.