

**Section 3.7: Additional Problems**

1. A particle moves in straight-line motions for  $t \geq 0$ . The position of the particle is given by  $f(t) = t^2 e^{-t}$ 
  - (a) When is the particle at rest?
  - (b) Find the total distance traveled during the first 6 seconds.
  - (c) Find the displacement of the particle during the first 6 seconds.
  
2. A particle moves in straight-line motions  $t \geq 0$ . The position of the particle is given by  $f(t) = \frac{9t}{t^2 + 9}$ 
  - (a) When is the particle at rest?
  - (b) Find the total distance traveled during the first 6 seconds.
  - (c) Find the displacement of the particle during the first 6 seconds.