

1. Evaluate the derivative of the function

$$f(x) = \frac{(e^x + x)^2}{3x^2} \tag{1}$$

2. A particle is moving on the curve $x(t) = t^3 + 21t + 10$.

a) Find the time t at which this particle is at rest.

b) Find the speed of this particle at $t = 5$ second.

c) When is this particle moving in positive direction of x-axis?

Hint: x' and x'' give you the value of speed and acceleration, respectively. A particle is at rest at time t_0 when the value of speed is zero.