Differentiate. Do not simplify.

Find the points on the graph of where the tangent line is horizontal.

Find the equation of the tangent line at point to the graph of the curve

Find the first, second, and third derivative of function

Determine the slope of the tangent at point on

the graph of

Find the equation of the tangent line to the curve passing through the point
Draw a diagram to illustrate the situation.

A position function of a particle is given by

a. Find the moments of time when the particle is at the origin.
b. Find $v(t)$ and the moments of time when the particle is at rest.
c. Find $a(t)$ and the moments of time when the acceleration is

Analyze the differentiability of the following function:

State the restrictions in its domain where the function does not exist.

Explain two of three cases where a function is not differentiable at a point.

Long Answers. Pick Any Two. (4 marks each)

Consider

Differentiate

The line is tangent to the curve Determine the point of tangency and the value of