

Name:

2/10/06

Math 251 Quiz 4

1. (10pts each) Find the derivatives of the following functions.

(a)  $f(x) = 7x^4 + 3x^2 - 101$

(b)  $g(x) = 12e^x - \sqrt[3]{x}$

(c)  $k(t) = \frac{t^3}{\sqrt{t}} + \frac{5}{t^2}$

2. (15pts) Find the equation of the tangent line to the curve  $y = 3x^4 + 12x - 7e^x$  at the point  $(0, -7)$ .

3. (15pts) Find all points on the curve  $y = x^3 + 3x^2 - 12$  where the tangent line is horizontal.