

NAME: _____

Math 200 Calculus I (Bueler)

5 March 2008

Quiz #4

20 points total. You have 20 minutes.

1. (4 pts) Differentiate the function:

$$f(x) = \frac{A}{x^{10}} + Be^x$$

2. (4 pts) Find $f'(x)$ and $f''(x)$ if $f(x) = x^{5/2}e^x$.

3. (4 pts) Find the points on the graph $y = x^3 - 3x + 1$ where the tangent line is horizontal.

4. (4 pts) Recalling that $\tan x$ is the quotient of more elementary trigonometric functions, show why

$$\frac{d}{dx}(\tan x) = (\sec x)^2.$$

5. (4 pts) Find the equation of the tangent line to the graph of $y = \sin x$ at the point with x -coordinate $x = \pi/4$.