Math 1A Quiz 3

February 15th, 2008

Name _____ SID _____

1. Find a degree-3 polynomial $p(x)$ such that the graph of $p(x)$ has a horizontal tangent line at the point $(0, 0)$ and a tangent line with slope 1 at the point $(1, 3)$.

2. Let f be the function defined as follows:

$$f(x) = \begin{cases} x^2 \cot(2x) & , \quad x \neq 0 \\ 0 & , \quad x = 0 \end{cases}$$

Find $f'(0)$, or explain why it does not exist.