Name:

Math 116 Quiz 1

September 15, 2010

Directions: WRITE YOUR NAME ON THIS QUIZ! Except where indicated, merely finding the answer to a problem is not enough to receive full credit; you must show how you arrived at that answer. DO NOT convert irrational numbers such as $\sqrt{3}$ or π into decimal approximations; just leave them as they are.

1) (8 points) Find the first derivative of $f(x) = x^2 \tan(3x + 1)$.

2) (6 points) Evaluate $\lim\limits_{x \to 5} \dfrac{x^2 - 2x - 15}{4x^2 - 20x}$.

3) (7 points) Determine the value of $\displaystyle\int_0^{\sqrt{\sqrt{\frac{\pi}{4}}}} 2x \cos(x^2)\, dx$.

4) (4 points) Compute $\dfrac{dg}{dx}$ where $g(x) = \displaystyle\int_{3}^{x^5} \sqrt{1 + t^6}\, dt$.