Name:

Math 116 Quiz 1

January 12, 2011

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 $f(x) = x^2 \cos(\pi x^4)$.

2) (6 points) Evaluate $\lim\limits_{x \to 3} \dfrac{12x^2 - 36x}{x^2 - 2x - 3}$.

3) (7 points) Determine the value of $\displaystyle\int_{\frac{\pi^2}{16}}^{\frac{\pi^2}{9}} \frac{\sec^2(\sqrt{x})}{\sqrt{x}}\, dx.$

4) (4 points) Compute $\dfrac{dg}{dx}$ where $g(x) = \displaystyle\int_{2}^{4x^5} \sqrt{t + t^8}\ dt$.