

Name:

Math 116 Quiz 1

January 7, 2022

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 $\lim_{x \rightarrow 5} \frac{x^2 - 2x - 15}{4x^2 - 20x}$.

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

4) (4 points) Compute $\frac{dg}{dx}$ where $g(x) = \int_3^{x^5} \sqrt{1+t^6} dt$.