

Name: _____

This quiz covers: 3.6, 4.5, 4.8, 5.1 and 5.2.

Directions: Complete all question and **show all applicable work.** Partial credit will be given. All questions are equally weighted.

1.) Compute the derivative of $f(x) = \arctan(x^2)$.

2.) Compute the limit of $\lim_{x \rightarrow \infty} \frac{\ln(x)}{\sqrt{x}}$

3.) Using simple geometric shapes, find the area under the curve of $f(x) = 2x + 2$ on the interval $(0, 2)$.