

Quiz 6 — Wednesday, August 4

Name: _____

1. (1 points) What is $\frac{d}{dx}(\tan^{-1}(x))$?

2. (3 points) If $\sqrt{x} + \sqrt{y} = 2$, use implicit differentiation to find $\frac{dy}{dx}$.

3. (3 points) Let $f(x) = x^{(x^2)}$. Compute $f'(x)$ using logarithmic differentiation.

4. (3 points) Suppose that a cube has a side length s that varies with time. At one point in time, the side is 3 cm long and is decreasing at a rate of $\frac{1}{6}$ cm/s. How fast is the surface area of the cube changing? (Make sure to include units in your final answer.)