Quiz 4

Your name:

Your TA's name:

No calculators. Show all your work (no work = no credit). Write neatly.

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1. [5 points] Use logarithmic differentiation to find the derivative of the function $(\sin x)^x$.

2. [5 points] Simplify the expression $\sin(\tan^{-1} x)$ (write it without trig. functions).

3. [5 points] Evaluate the limit

$$\lim_{x \to 0^+} \sqrt{x} \ln x$$

bonus problem [5 points extra] Find the absolute maximum and absolute minimum values of the function $f(x) = x\sqrt{8 - x^2}$ on the interval $[-2, 3]$. Justify your results.