

You have 20 minutes to take this quiz. Each problem will be graded for clarity of work as well as correctness, so show all work **clearly and in order**. Circle or otherwise indicate your final answers. This time there are no problems on the back of the page; draw a house there for two points.

1. (10 points) [Similar to #58, 3.6]

Prove that $\frac{d}{dx}(\csc x) = -\csc x \cot x$.

2. (10 points) [Similar to #20, 3.7]

Given that $x = \sin^2 y$, find the exact value of $\frac{dy}{dx}$ at the point $(\frac{1}{2}, \frac{\pi}{4})$.

Bonus (2 points): What does the number you found in problem (2) represent in terms of the graph of the equation $x = \sin^2 y$?