

Quiz 3

Name: \_\_\_\_\_

Limits and Continuity

Math 408D:

Instructor: Athil George

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**Problem 1.** Compute the following limit.

$$\lim_{x \rightarrow 0} x^4 \sin\left(\frac{\pi}{x}\right)$$

**Problem 2.** Consider the natural logarithmic function  $f(x) = \ln(x)$ . Find the equation of the tangent line at  $x = 1$ . Use the limit definition of the derivative.