Name: Entry No.:

AMTL 100 (CALCULUS)
Mock Quiz

Date: 19/09/2024 Total Marks: 10 Time: 15 mins

1. Find the following limits (with justification).

   (a) $\lim_{x\to 1} \frac{\sin(x^2-1)}{x-1}$ [2]

   (b) $\lim_{x\to \infty} \frac{2x^2+5}{3x^2-1}$ [2]

   (c) $\lim_{x\to \infty} \frac{\sin(x^2+1)}{x^2}$ [2]

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2. Use the formal definition of limit to prove that the function $f(x) = x^2 + 1$ is continuous at $c = 1$. [4]