

Math 131 - Quiz 12

May 6, 2026

Name _____

Score _____

Show all work to receive credit. Supply explanations where necessary. This quiz is due Monday, May 11.

1. (3 points) Evaluate each limit.

(a) $\lim_{x \rightarrow 1} \frac{\sin(\ln x)}{x - 1}$

(b) $\lim_{x \rightarrow 0^+} x \ln(x^4)$

2. (3 points) Let $f(x) = x \cos(\pi x)$. Use 4 subintervals of equal length and left subinterval endpoints to compute the corresponding Riemann sum for f over $[1, 2]$.

Turn over.

3. (2 points) Find the function $v(t)$ that satisfies

$$v'(t) = 9t^2 - 4t + 5, \quad v(-1) = 0.$$

4. (2 points) Evaluate the indefinite integral.

$$\int \left(\frac{1}{x^2} - \sqrt{x} + \frac{2}{x} + 5 \sin x \right) dx$$