

# Math 131 - Quiz 3

September 4, 2025

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive credit. Supply explanations where necessary. Partial credit may be awarded on multiple choice problems for correct work or explanations.

---

1. (2 points) Determine the limit analytically:  $\lim_{x \rightarrow 0} \frac{(x-2)^2 - 4}{x}$

2. (3 points) Determine the limit analytically:  $\lim_{t \rightarrow 16} \left( \frac{4 - \sqrt{t}}{32 - 2t} \right)$

3. (3 points) Determine the limit analytically:  $\lim_{x \rightarrow -1} \frac{x^2 + 3x + 2}{2x^2 + 2x}$

4. (2 points) Determine the limit analytically:  $\lim_{x \rightarrow 0} \frac{\sin 2x}{4x}$