

Math 131 - Quiz 6

September 30, 2026

Name _____

Score _____

Show all work to receive credit. Supply explanations where necessary.

1. (4 points) Let $f(x) = \frac{2}{x} - \frac{3}{x^2}$. Find an equation of the line tangent to the graph of f at the point where $x = 1$.

2. (4 points) Find each derivative. Do not simplify.

(a) $\frac{d}{dt}(t^3 \tan t)$

(b) $\frac{d}{dx} \left(\frac{3 + x + \sqrt[3]{x^5}}{\cos x} \right)$

3. (2 points) Suppose $P(t) = 10t + 300\sqrt{t} + 1850$ gives the population of a small town after t years. Find and interpret $P'(9)$. Give units with your answer.