

# Math 131 - Quiz 4 (TH)

September 21, 2022

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary. Unless otherwise indicated, use differentiation rules rather than the limit definition of derivative. This quiz is due September 26.

---

1. (3 points) Determine each derivative.

(a)  $\frac{d}{dx}(5x^4 - 17x + 7)$

(b)  $\frac{d}{dx}\left(\frac{1}{x^3} + 5 \cos x\right)$

(c)  $\frac{d}{dx}\left(\frac{8}{\sqrt[3]{x^2}} + 3 \sin x\right)$

2. (2 points) Find an equation of the line tangent to the graph of  $y = x^{1/2} + x^2 + x^{-1/2}$  at the point where  $x = 4$ .

*Turn over.*

3. (2 points) Use the limit definition of the derivative to determine  $g'(x)$  when  $g(x) = \frac{1}{x}$ .