

# Math 131 - Quiz 4

October 20, 2021

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary. This quiz is due October 27.

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1. (1 point) Let  $g(x) = 3x - 7$ . Compute  $g^{-1}(8)$ .

2. (3 points) For  $x \geq 0$ , let  $f(x) = \sqrt{x^5 + 4}$ . Find  $(f^{-1})'(6)$ .

3. (2 points) Let  $f(x) = \ln(x^2 + 1)$ . Find  $f'(x)$  and use it to determine a point at which the graph's tangent line is horizontal.

*Turn over.*

4. (2 points) Find  $g''(x)$  if  $g(x) = e^{-5x^2}$ .

5. (2 points) Use logarithmic differentiation to find  $\frac{dy}{dx}$  when  $y = \frac{(x+1)^2(x^3+1)}{4x^2(x-5)}$ .