

Math 131 - Quiz 7

March 24, 2022

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due March 31.

1. (2 points) Let $f(x) = x^3 + 4x + 3$. Compute $(f^{-1})'(3)$.

2. (3 points) Let $g(x) = x + \sqrt{x}$. Compute $(g^{-1})'(4)$. You will need to use your calculator (or the quadratic formula) to compute $g^{-1}(4)$.

Turn over.

3. (3 points) Determine each derivative.

(a) $\frac{d}{dx} \cot^{-1}(3x + 1)$

(b) $\frac{d}{dt}(t e^{t^2})$

(c) $\frac{d}{dx} \ln \left(\frac{x^2(x + 1)}{5x + 4} \right)$

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