

Math 131 - Quiz 7

March 25, 2026

Name _____

Score _____

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

1. (6 points) Assume that y is implicitly defined as a function of x by the equation $xy + y^3 = 2x - 1$. Find an equation for the normal line passing through $(2, 1)$.

2. (1 point) Explain why $f(x) = |x|$ does not have an inverse.

3. (2 points) Let $g(x) = x^3 + 5x - 8$. Find $g^{-1}(-2)$.

4. (1 point) Shown below are some values for the function f . Assuming that f has an inverse, determine $f^{-1}(5)$.

$$f(1) = -7, \quad f(5) = 19, \quad f(3) = -5, \quad f(-5) = 4, \quad f(0) = 2, \quad f(8) = 5$$