Math 131 - Quiz 7

Name _____

March 20, 2023

Score _____

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

1. (3 points) For $x \geq 1$, let $g(x) = x^2 - 2x + 5$. The function g has an inverse.

   (a) Determine the value of $g^{-1}(8)$.

   (b) Now find $(g^{-1})'(8)$.

2. (4 points) Evaluate each derivative.

   (a) $\dfrac{d}{dx} \sin^{-1}(\pi x^2)$

   (b) $\dfrac{d}{dx}[e^{-3x} \ln(x^2)]$

Turn over.

3. (3 points) Use logarithmic differentiation to find dy/dx.

$$y = \frac{x^4(x-8)^2}{(x+2)^3(2x+1)}$$