

Math 166: Honors Calculus II

Name: _____

Quiz 3 Feb. 4, 1999

1. Compute the derivative of $f(x) = \left[\sqrt{2 + \sin(x)} \right]^{1+x^3}$.

2. a) Define $\sinh(x)$, and derive a formula for $\sinh^{-1}(x)$.

b) Integrate $\int \frac{1}{\sqrt{x^2 + 2x + 2}} dx$.

3. a) State the Theorem on Derivatives of Inverse Functions.

b) Let $f(x) = x^5 + 2x^3 + 3x$. Compute $(f^{-1})'(x)$ for $x = 0$ and $x = 6$.