

Name: _____

Math 231 Quiz 7

1. (4 pts) Simplify the expression.

$$\ln(2\sqrt{e}) - \ln 2$$

2. (4 pts) Solve the equation for x .

$$e^{-x^2} = \frac{1}{2}$$

3. (8 pts) Differentiate the function.

(a) $\ln(\sin x)$

(b) $e^{-\frac{1}{x^2}}$

4. (4 pts) Evaluate the integral.

$$\int \frac{e^x}{1 + e^x} dx$$

Bonus. (2 pts) Use logarithmic differentiation to find the derivative of the function.

$$y = \frac{x(x-1)^2}{\sqrt{x^2+1}}$$