

Name: \_\_\_\_\_

Math 231 Quiz 7

1. (4 pts) Simplify the expression.

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

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

2. (6 pts) Differentiate the function.

(a)  $x(\ln x) - x$

(b)  $e^{-x^2}$

**3.** (10 pts) Evaluate the integral.

(a)  $\int_1^e \frac{\ln x}{x} dx$

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