

Name : _____

Take Home Quiz 5 February 23, 2006

DIRECTIONS: Clearly mark all your answers. Do not work with partners. **Show all work!**
There is a total of 20 possible points on this exam. Also, **Please staple your quiz!**

1. (3 points) Solve for x:

$$4^{5x+1} = 16^{2x-1}$$

2. (3 points) Simplify:

$$\frac{-2x^3e^{-2x} - 3x^2e^{-2x}}{x^6}$$

3. (4 points) Simplify:

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

4. (3 points) Solve:

$$3xe^{-x} + x^2e^{-x} = 0$$

5. (3 points) Solve:

$$\frac{3}{2}\ln(4) - \frac{3}{2}\ln(8) + 2\ln(2) = \ln(x)$$

6. (4 points) Solve:

$$(\ln(x))^3 = \ln(x^4)$$