Instructions: Solve the following. Remember to show all work in order to receive full credit.

1. In the same coordinate plane graph
   \( F(x) = 2^{-x} \) and \( G(x) = 4^x \).

2. Evaluate the following:
   a) \( \ln e^{-3} \)
   b) \( \log 1.72 \)
   c) \( \log_3 7 \)

3. Write the expression as the logarithm of a single quantity.
   \( 3( \ln x - 2 \ln (x^3 - 1)) + 4 \ln 5 \)

4. Expand the expression as the sum, difference and/or multiple of logarithms.
   \( \log \frac{5y^3}{x^2} \)

5. Solve the following equations.
   a) \( 2 \ln x = 14 \)
   b) \( \log_2 x + \log_2 (x + 2) = \log_2 (x + 6) \)
   c) \( e^x = 8 \)
   d) \( 5^x = 7 \)

6. A deposit of $1,000 is invested at 8.5%. If the interest is compounded continuously what is the balance in 5 years?

   * REMEMBER after QUIZ # 6 there will be an exam in the TESTING CENTER
   * EXAM # 3 will include concepts from Quizzes # 5 and # 6