Math 111 WS 11, Logarithmic and Exponential Equations

Name: _____

1. Solve the following equations involving exponentials or logarithms.

   a. $2\log_5(x) = \log_5(9)$

   b. $\log_5(x+6) + \log_5(x+2) = 1$

   c. $\ln(x) = \ln(x+6) - \ln(x-4)$

   d. $\log(x) + \log(x-21) = 2$

e. $\log_4(x^2 - 9) - \log_4(x + 3) = 3$

h. $8 \cdot 3^x = 5$

f. $\log_{1/2}(x - 1) + \log_{1/2}(x + 1) = -2$

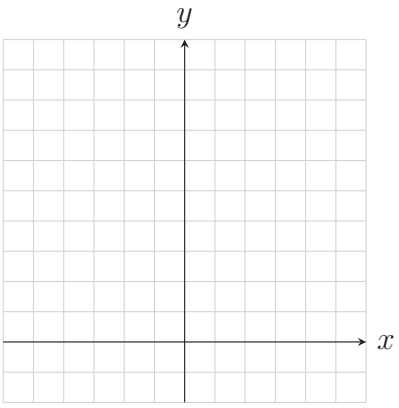
i. $5^{x-2} = 3^{3x+2}$

g. $2^x = 5$

j. $\left(\frac{4}{3}\right)^{1-x} = 5^x$

2. Solve the following equations by graphing. You may use your calculator on these problems.

a. $e^x = x^2$



b. $e^x - \ln(x) = 4$