1. Solve.

   a) $3^{x-4} = 7^{2x+5}$

   b) $e^{3x-7} \cdot e^{-2x} = 4e$

   c) $3(2)^{x-2} + 1 = 100$

   d) $e^{2x} - 6e^{x} + 8 = 0$

   e) $\left(\frac{1}{9}\right)^{x} = -9$

   f) $3e^{2x} + 2e^{x} = 1$

2. Solve.

   a) $\log_4(x^3 + 37) = 3$

   b) $\ln x + \ln x^2 = 3$

   c) $\log_3[(x+5)(x-3)] = 2$

   d) $\log x + \log(x+15) = 2$

   e) $\log(x+25) = \log(x+10) + \log 4$

   f) $\log(x-10) - \log(x-6) = \log 2$

   g) $\ln e^{x} - \ln e^{3} = \ln e^{3}$

   h) $\log x = \sqrt{\log x}$

   i) $\log_2\sqrt{2x^2} = \frac{3}{2}$

   j) $e^{x} + 6e^{-x} = 5$

3. Solve for the given variable.

   a) $r = p - k\ln t$, for t

   b) $A = \frac{Pr}{1-(1+r)^{-n}}$, for n

4. Solve by using a graphing calculator. *Round solutions to the nearest hundredth.*

   a) $e^{x} + \ln x = 5$

   b) $\ln x = -\sqrt[3]{x+3}$

5. Find $f^{-1}(x)$ and give the domain and range of f^{-1}.

   a) $f(x) = e^{x+1} - 4$

   b) $f(x) = 2\ln 3x$