1. Let y = (1.091)x. Use a graph to estimate x if y = 2.

2. An investment of $1,235 increased to $7,652 in 13 years. If the interest was compounded continuously, find the interest rate.

3. Find the zeros of f(x) = x3(5e5x) + 4x2e5x

4. Simplify the expression.

$$\frac{(e^{w}+e^{-w})\left(e^{w}+e^{-w}\right)- (e^{w}-e^{-w})(e^{w}-e^{-w})}{(e^{w}+ e^{-w})^{2}}$$

5. Estimate y if x = 40.

y = e0.07x

6. Change to exponential form.

log5 $\frac{1}{125}$ = -3

7. Change to exponential form.

ln x = 0.9.

8. Find the number.

log88

9. Solve the equation.

log2x = log2(10-x)

10. Express in terms of logarithms of positive real numbers x,y, z, w.

log2 $\frac{x^{4}w}{y^{5}z^{3}}$

11. Find the exact solution using common logarithms and a two-decimal -place approximation of the solution of the equation.

9x+5 = 71-4x

12. Find the solution(s) of the equation.

3x + 81(3-x) = 30.

13. Use the change of base formula to approximate the y-intercept.

f(x) = log2(x+11)

14. Solve the equation.

362x($\frac{1}{6})^{x+2 }=216(6^{x})^{-2}$