1) Sketch the graph of each of the following quadratic functions, indicating the coordinates of the vertex, the y-intercept, and the s-intercept(s)

a) $f(x) = x^2 + x - 6$

b) $f(x) = -2x^2 - 12x - 16$

2) Given the demand function below, determine the revenue function and determine the price "p" that maximizes the total revenue. Now find the maximum revenue for: $q = -5p + 1200$

3) Given the following the revenue and cost functions: $R(x) = -x^2 + 10x$ and $C(x) = 2x + 12$ find:

a) The maximum revenue

b) The maximum profit

4) Graph the following

a) Graph $f(x) = 2^x$

b) Graph $g(x) = \log_3 x$

5) An initial deposit of $5000 earns 6% interest compounded monthly for 12 years. How much money is there at the end of 12 years? (Remember: $A = P(1 + r/k)^{kt}$)

6) How much more money is there at the end of 12 years if $5000 is invested at 6% compounded continuously than if the money were to just compound monthly for 12 years? (Remember: $A = Pe^{r t}$)

7) Sales of a new model of word processor are approximated by $S(t = 5000 - 4000e^{-t}$ whee t represents the number of years that the word processor has been on athe market, and S(t) represents sales in thousands.

a) Find the sales n year "0".

b) When will the sales reach $4,500,000?

8. Write the equation:

a) $\log_4(16)=2$ in exponential form.

b) $6^2 = 36$ in logarithmic form.

9. Solve for x in the following. You may use the log rules or show your work for the following. All of these just involve rewriting from log for to exponential or vice versa.

a) $\log_3 9 = x$ b) $\log_7 x = 3$ c) $\log_x 81 = 4$

d) $\log_5 5 = x$ e) $\log_{12} 12^4 = x$ f) $\log_6 1 = x$

g) $\log (100) = x$ h) $\log (-4.35) = x$ i) $\ln x = 4.18$

10) Solve the following:

a) $6^x = 32$ b) $2^4 = 2^{2(2x+3)}$

11. When Power and Money, Inc., charges $600 for a seminar on management techniques, it attracts 1000 people. For each $20 decrease in the fee, an additional 100 people will attend the seminar. The managers are wondering how much to charge for the seminar to maximize their revenue.