

For help with these problems

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Math\_Questions\_0050

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:  $A = Pe^{rt}$ )

7) Sales of a new model of word processor are approximated by  $S(t) = 5000 - 4000e^{-t}$  where t represents the number of years that the word processor has been on the 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.