Algebra 1 - Exponential Growth & Decay   **PRACTICE WORKSHEET**

Name _____**Date**_____**Period**_____**Score**_____
Place your answers in the answer column. Show work clearly and neatly.

	Answers

1.   Your grandmother put $1000 into a savings account for you that earns 8% interest annually.

    a) Write the growth model that represents your balance earned over *t*, number of years.

    b) Determine the amount you will have in the account after 3 years.

    c) How long will it take to earn $1360.48?

1.

a)_____

b)_____

c)_____

2.   You bought a new car for $10,000. It depreciates at a rate of 2% annually.

    a) Write the decay model that represents the value of your car over *t* number of years.

    b) Determine the value of the car after 3 years.

    c) How long will it take for the car to depreciate to $9039.21?

2.

a)_____

b)_____

c)_____

3.   You bought a house for $165,000. It appreciates at a rate of 4.3% annually.

    a) Write the growth model that represents the value of your house over *t* number of years.

    b) Determine the value of the house after 10 years.

    c) How long will it take for the house to have a value of $337,534 ?

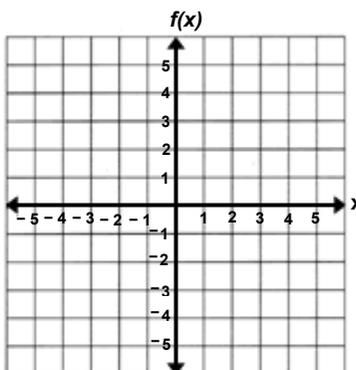3.

a)_____

b)_____

c)_____

4.   Given the exponential function, $f(x) = 2^x - 4$ complete the following :

   a)   Complete the table:

   b)   Graph the function using the ordered pairs from part (a).

f(x)

   c)   Identify, if it exists, the y-intercept.

   d)   Identify, if it exists, the x-intercept.

   e)   State the domain.

   f)   State the range.

5.   A scientist recorded the growth of a certain bacteria. The experiment began with seven bacteria (time = 0.) The growth of the number of bacteria is given in the table below:

Hours	Number of Bacteria
0	7
1	8
2	10
3	14
4	22

   Using the information above and the exponential model, $A(x) = b^x + c$, predict the number of bacteria that will exist after 5 hours.