Algebra 1 Name_____ ID: 1

Growth and Decay Review

Date_____ Period____

1) A population of field mice is 120. The population increastes at a rate of 9% a year. Write an exponential function that models this situation:

2) A rock of radioactive material has 500 atoms in it. The number of atoms decreases at a rate of 11% a day. Write an exponential function that models this situation.

3) A painting is valued at $10,000 but the value increases at a rate os 3% a year. How much will the paining be worth in 5 years?

4) The population of wild ducks in Lake County is 2,500. The population is decreasing at a rate of 7% a year. How many ducks will be left in 10 years?

5) Mr. Miller has $5000 to invest. If he invests into a savings account that pays 12% interest every year, how much money will he have in 5 years?

6) Mr. Miller has $5000 to invest. If he invests into a CD that pays 1.1% interest every month, how much money will he have in 5 years?

7) Mr. Miller has $5000 to invest. If he invests into a bond that pasys 4% interest every 6 months, how much money will he have in 5 years?

8) Mr. Miller has $5000 to invest. If he invests into a mutual fund that pays 2.2% interest every 2 months, how much money will he have in five years?

9) Identify if the function below is growth or decay:

$f(t) = 300 \cdot 1.12^5$

10) Identify if the function below is growth or decay:

$f(t) = 300(1 + 0.23)^5$

11) Identify if the function below is growth or decay:

$f(t) = 300(1 - 0.001)^5$

12) Identify if the function below is growth or decay:

$f(t) = 300 \cdot 0.82^5$

13) Identify the RATE as a percent for the following function:

$f(t) = 100 \cdot 1.32^3$

14) Identify the RATE as a percent for the following function:

$f(t) = 100(1 - 0.14)^3$

15) Identify the RATE as a percent for the following function:

$f(t) = 100 \cdot 0.75^3$

16) Identify the RATE as a percent for the following function:

$f(t) = 100 \cdot 1.014^3$

Answers to Growth and Decay Review (ID: 1)

1) $f(t) = 120(1 + 0.09)^t$
2) $f(t) = 500(1 - 0.11)^t$
3) $11592.74
4) 1209 ducks
5) 8,811.71
6) 9,639.16
7) 7,401.22
8) 9,604.99
9) growth
10) growth
11) decay
12) decay
13) 32%
14) 14%
15) 25%
16) 1.4%