Name: _____ Unit 6: Exponents & Exponential Functions

Date: _____ Bell: _____ Homework 8: Exponential Growth & Decay

9-1 Homework

** This is a 2-page document! **

EXPONENTIAL GROWTH FUNCTION	EXPONETIAL DECAY FUNCTION
$y = a(1 + r)^t$	$y = a(1 - r)^t$

EXPONENTIAL GROWTH APPLICATIONS

1. Annual sales for a fast food restaurant are $650,000 and are increasing at a rate of 4% per year. Write an exponential growth function, then find the annual sales after 7 years.

2. The population of a school is 800 students and is increasing at a rate of 2% per year. Write an exponential growth function, then find the population of the school after 9 years.

3. During a certain period of time, about 70 northern sea otters had an annual growth of 18%. Write an exponential growth function, then find the number of sea otters after 4 years.

4. Twenty years ago, Mr. Davis purchased his home for $160,000. Since then, the value of the home has increased about 5% per year. Write an exponential growth function to find the value of the home today.

EXPONENTIAL DECAY APPLICATIONS

5. The population of a town is 2500 and is decreasing at a rate of 3.5% per year. Write an exponential decay function to find the population of the town after 5 years.

6. Daniel's Print Shop purchased a new printer for $35,000. Each year it depreciates at a rate of 5%. Write an exponential decay function to find its approximate value after 8 years.

7. Kathy plans to purchase a car that depreciates at a rate of 12% per year. The initial value of the car is $21,000. Write an exponential decay function to find the value of the car after 3 years.

8. A population of fish starts at 8,000 and decreases by 6% per year. Write an exponential decay function to find the population of fish in 10 years.