Name:_____ Period: _____ Score_____

5.6 HW – Decay

1. In the years from 2010 to 2015, the elk population of Utah is expected to decrease about 6% annually. In 2010, the population was about 23,500.

a) Write an explicit equation.

b) What is the population expected to be in 2020?
(Round to the nearest whole number.)

2. In the years from 2010 to 2015, the population of the District of Columbia is expected to decrease about 0.9% annually. In 2010, the population was about 530,000.

a) Write an explicit equation.

b) What is the population expected to be in 2015?
(Round to the nearest whole number.)

3. Adella bought a car for $10,000. One year later, the car was worth $8,000. A year after that, the car was worth $6,400.

a) Write an explicit equation for how much the car will be worth after n years.

b) How much will the car be worth after 5 years (Round to the nearest hundredth)?

4. Leonardo purchases a car for 18,995. The car depreciates at a rate of 18% annually. After 6 years, Manuel offers to buy the car for $4,500. Should Leonardo sell the car? **Explain.**

5. The value of a car can be modeled by the equation $y = 24{,}000(0.845)^t$ where *t* is the number of years since the car was purchased.

a) Identify the initial amount

b) Identify the decay factor

c) Identify the annual percent decrease

6. The value of a house can be modeled by the equation $y = 190{,}000(0.921)^t$ where *t* is the number of years since the house was purchased.

a) Identify the initial amount

b) Identify the decay factor

c) Identify the annual percent decrease