Algebra 1 Hwk #14 Sec 8-8 Spring 2016 Name:

1. Use each percent change to find the base of an exponential equation.

a) 46% Increase b = b) 18.03% decrease b =

2. For each exponential equation find the percent change and state if it is an increase or a decrease.

a) $y = 4500(0.306)^x$ b) $y = 1.025(1.219)^x$

% change = % change =

3. Tell if each exponential equation represents Growth or Decay.

a) $y = 920(0.99985)^x$ b) $y = 57\left(\frac{156}{150}\right)^x$ c) $y = 2.1(1.34)^{-x}$

4. The number of foreclosures has been decreasing 1.3% each year. In 2010 there were 1,300,000 foreclosures.

a) Model this situation with an exponential equation.

b) Find the number of foreclosures in 2016.

c) Find the number of foreclosures in 2005.

5. The value of a painting has been increasing 4.9% each year. The painting was valued at $35,000 in 2012.

a) Model this situation with an exponential equation.

b) Find the value of the painting in 2004.

c) Find the value of the painting in 2019.

6. The number of cells of a certain virus double every 10 minutes. At 8:00 am there were 20 bacteria.

a) Model this situation with an exponential equation.

b) Find the number cells at 2:30pm that same day.

7. The certain medicine has a half-life of 20 mintues. At 6:00pm you took a 420mg dose.

a) Model this situation with an exponential equation.

b) Find the number of mg of medicine remaining in your system at 10:30pm the same day.