Name _____ Due Date _____ Period _____

9.1b Exponential Growth and Decay

1) Given the equation $y = 35(0.57)^x$

a) Does this equation represent growth or decay? _____

b) What is the rate of growth or decay? _____

c) What is the initial value? _____

d) Evaluate for x = 5 _____

2) Look at each exponential function and identify the initial value, the growth or decay factor, and the growth or decay rate

A) $y = 1.3^x$ B) $y = 9(3)^x$ C) $y = 1.4(1.03)^x$

D) $y = 1.9(0.2)^x$ E) $y = 0.91^x$ F) $y = 16(0.75)^x$

3) Ryan is saving for his college tuition. He has $2,550 in a savings account that pays 6.25% annual interest.

a) Write an exponential equation describing this situation. _____

b) How much money will Ryan have in his account 6 years from now? _____

4) A used car was purchased for $12,329 this year. Each year the car's value decreases 8.5%.

a) Write an exponential equation describing this situation. _____

b) What will the car be worth in 2020? _____

5) Your baby brother has an ear infection. The doctor said there are probably 50,000,000 bacteria in his left ear. The penicillin the doctor prescribed will kill 7% of the bacteria every hour. How many bacteria will be in your brother's ear in . . .

a) 1 day

c) 1 week

c) 3 hours