

WORDED QUESTIONS – EXPONENTIAL EQUATIONS

NAME: _____

DATE: _____

1. Sam invests \$130 at 9.4% compounded quarterly for 2 years. How much money does he have after the allotted time.
2. David invests \$7,300 at 7% compounded semiannually for three years. How much interest has he made?
3. The 2000 population of Jacksonville, FL was 732,000 and was increasing at the rate of 1.49% each year. At that rate when will the population be 1 million?
4. The population in Millville in the year 1890 was 6250. Assume the population increased at a rate of 2.75% per year
 - a. Estimate the population in 1915 and 1940
 - b. Predict when the population reached 50,000
5. The half life of a certain radioactive substance is 14 days. There are 6.6g present initially.
 - a. Express the amount of substance remaining as a function of t
 - b. When will there be less than 1 g remaining?
6. The half life of a certain radioactive substance is 65 days. There are 3.5 g present initially.
 - a. Express the amount of substance remaining as a function of t
 - b. When will there be less than 1 g remaining?
7. The number of B bacteria in a petri dish culture after t hours is :

$$B = 100e^{0.693t}$$

When will the bacteria be 200. Estimate the doubling time of the bacteria.

8. The number of C Carbon -14 present in a substance after t years is :

$$C = 20e^{-0.0001216t}$$

Estimate the half life of the carbon – 14.

9. The culture of 200 bacteria doubles every hour. Predict when the bacteria will be 350,000.