Continuous vs Non Continuous Exponential Equations 2

Introduction to Calculus

Write an equation for each situation below. Assume non-continuous unless continuous growth or decay is explicitly stated. Choose what your independent variable should stand for.

1) A bank account is started with a $5,000 deposit and the interest rate is 1.1% compounded continuously.

2) You invest $10,000 in a bank CD with 0.9% interest compounded monthly.

3) The value 'V' of an investment is tripling every 15 years.

4) A population is 300 is increasing at a continuous rate of 5%.

5) A bank account is started with a $5,000 deposit and the interest rate is 1.1% compounded annually.

6) The number of teddy bears in a store begins at 2000 and decreases at a continuous rate of 3.5% per day throughout the month of December.

7) The population of 700 is doubling every 50 years.

8) The initial population of bacteria is doubling 3 times per hour.

9) My new $2,000 computer is expected to depreciate by 40% each year.

10) A g_o gram sample of an isotope has a half-life of 5700 years.

11) The population of bacteria is 5000 and is decreasing continuously at a rate of 1.2%.

12) A population 9,000 and is decreasing at a rate of 6% every 5 years.

13) If a population of bacteria is decreasing at a rate of 20% per hour, how many hours will it take until only 1% of the original population is still alive?