

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Graph the function.

1) $f(x) = 2e^{-x}$ 1) _____

2) $f(x) = e^{3x} - 4$ 2) _____

3) $f(x) = e^x - 7$ 3) _____

4) $f(x) = 3 - e^{-x}$ 4) _____

Use the compound interest formula to determine the future value of the given principal P.

5) \$710 at 4% compounded continuously for 19 years 5) _____

Find the principal P that will generate the given future value A.

6) A = \$10,000 at 7% compounded continuously for 7 years. 6) _____

Solve the problem.

7) Susan purchased a painting in the year 2000 for \$7000. Assuming an exponential rate of inflation of 2.3% per year, how much will the painting be worth 4 years later? 7) _____

8) A bacterial culture has an initial population of 10,000. If its population declines to 3000 in 6 hours, what will it be at the end of 8 hours? Assume that the population decreases according to the exponential model. 8) _____

9) A sample of 700 grams of radioactive substance decays according to the function $A(t) = 700e^{-0.043t}$, where t is the time in years. How much of the substance will be left in the sample after 10 years? Round to the nearest whole gram. 9) _____