Name: _____ Date: _____ IB Math A&A SL

Lesson 3.9 - Logarithmic & Exponential Models I

1. Francis Finklestein II invests $2000 into an account at an interest rate of 10%. Find how long it will take her to have $3000 if his investment is compounded

a. annually b. monthly c. continuously

2. Duplica invests $2000 at an annual rate of 5% and it is compounded daily.

a. Find the time it takes for her money to double.

b. Find the total amount of money she has after 10 years.

3. Mr. Braza invests $1500 and it takes 12 years for his money to double if his money is compounded continuously.

a. Find the annual interest rate.

b. Find the total amount of money he has after 15 years.

Radioactive Decay & Carbon Dating: What is half-life?

4. Carbon-14 has a half-life of 5715 years. If I begin with an initial quantity of 5g, how much will I have after 1000 years?

5. Carbon-14 has a half-life of 5715 years. Researchers detected 3.0 grams of Carbon-14 in a fossil. How much Carbon-14 was present in the fossil 1000 years ago?

6. Plutonium-239 has a half-life of 24,100 years. I store 2,500 grams in a container.

a. How much will I have after 10,000 years?

b. How long will it take to decay to 200 grams?