Logs and Exponentials LE4: Applications 1

1. Au-198 (that's gold) has a half-life of 2.696 days. You have 10 ounces of Au-198.
a. How much will you have in 5 days?

b. How long until you have 1 ounce left?

2. You have $100 to invest in the bank. The bank has an annual interest rate of 4.5%.
How long until you double your money?

3.   A Petri dish has 15 bacteria cells on it. The number of bacteria doubles every day.
How long until there are 1000 bacteria?

4. The world-wide supply of "I Can Do Algebra" Elmo dolls in 250,000. Stores report
that their stock is decreasing by 5% every day. In 6 weeks, how many dolls will be left?

5. In 2010, the population of a town is 59,000. If the population is increasing 3% every
year, how long until there is 100,000 people in the town?