MATH 119   Sample B *(Sectons 1.6, 1.7)*   NAME:

                           Class ID #:

1. You open an IRA account with an initial deposit of $10,000 which will accumulate tax-free at 4 % per year, compounded continuously.

  a) How much (to the nearest penny) will you have in your account after 10 years?

  b) How long does it take your initial investment to triple?

2. If 500 people have a personal computer in a town of 10,000 employees. If the number of PC was growing at 20% a year and the population at 10% per year. How long will it take to have PC per person? *(assume continuous growth)*

3) The population of a certain town is declining exponentially. If the population now is 10% less than it was 5 years ago.

 (a) Find the decline rate.

 (b) When will the population be 50% of the original? *(find the half-life)*

4) How long does it take amount to double at 8.5% compounded:
  a) annually   b) continuously

5) If the quantity of a certain radioactive substance is decreases by 5% in 10 hours, find the half-life.

6) The population of a certain town is declining exponentially due to immigration. If only 80% of the original population are still in town after 10 years:

   a) Find the decline rate.

   b) How long will it take for the population to be half what it was?