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?

   $14,918.25

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

   27.47 years

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)

   29.96 years

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.

   2.107%

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

   32.89 years

4) How long does it take amount to double at 8.5% compounded:

   a) annually
   b) continuously

   a) $t = 8.496$
   b) $t = 8.154$

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

   $t = 135.13$ hours

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.

   2.23%

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

   31.06 years