On Recursion

Example. 1. It has been estimated that the rate of growth of a the population in a southern canadian town during the last 10 years has been of 6% per year. If the town currently has 20,000 members, what will be its size in 7 years assuming the same rate of growth? When will the population double?

2. Suppose that after 3 years of steady 6% growth some changes on the environment reduce the growth to 4%. What will be the size of the population 2 years later?

3. Let again the initial population be of 20,000. This time however in addition to the annual internal growth of 6%, it is established that a quota of 600 immigrants will be allowed to settle in the community at the end of every year. Assuming that these two factors remain constant, what will the population be in 3 years?

4. Suppose now that the Chamber of Commerce has determine that for an optimal economic growth of the area the population must reach 30,000 in 4 years. If the annual internal growth remain constant at 6%, what should the initial quota of immigration be?

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5. Suppose that the initial population is of 20,000, the initial quota of immigrants is of 600, and the annual internal growth is of 6%. If this rate of growth increases by 0.5% every year, what will the population be in 10 years? If in addition to an increasing population rate an annual increase of 3% in the quota of immigrants, what will the population be in 10 years?