

DUE: MONDAY, JUNE 18, 2007 BY 11:59 PM

PROJECT DESCRIPTION:

You will choose one of the scenarios below and then use MS Excel to make the calculations and construct the amortization and annuity tables that go along with it.

To help you get started, you may use the sample amortization/annuity spreadsheet available on the course website at: <http://www.math.utk.edu/~dilling/math123/projects/>

Include a short written summary in the spreadsheet to describe what is going on. Be creative in creating the spreadsheet. Include additional formatting, calculations, information, graphs and charts if you want. Your project will be graded both on the accuracy and completeness of the information presented and on how well the information is presented: how concise, understandable, and useful the spreadsheet is.

You may work with other students on this project, but each student must turn in his or her own spreadsheet. You may use another program to create the spreadsheet (Lotus, Quattro, etc.), but it must be submitted in a format that I can open in MS Excel. If I can't open it, I will return it to you ungraded, and you will need to resubmit it in a format I can open.

If you have questions about the project, please let me know.

For any of the following scenarios, the annual inflation rate is 5.5%. To calculate the annual interest rate, add the four digits of your birth year and then divide by 4. For example, if you were born in 1979, the interest rate will be 6.5% (since $\frac{1+9+7+9}{4} = \frac{26}{4} = 6.5$).

Choose one of the following:

- Retirement financial planning
 1. Choose what age you want to retire. Calculate how much you think you will need to live each month in today's dollars (assume this is your only source of income after retirement). Adjust that monthly amount for inflation to the year you will retire. Based on that inflated monthly amount, calculate how much money is needed for a retirement fund that will pay you that amount monthly until you die (for example, at age 85). Construct an amortization table that contains this information and a monthly payment schedule.
 2. Calculate how much you need to contribute to your retirement fund each month in order to accumulate the amount calculated in part 1 by the time you retire. Construct an annuity table that contains this information and a monthly savings schedule.

- Saving for college for a child
 1. Calculate estimated monthly college expenses in today's dollars (including tuition, room, and board). Adjust that monthly amount for inflation to the year your child will start college. (For example, if you won't have a child for 5 years and that child starts college at age 18, that would be 23 years from now.) Based on that inflated monthly amount, calculate how much money is needed for a college fund that will provide that amount monthly for 4 years. Construct an amortization table that contains this information and a monthly payment schedule.
 2. Calculate how much you need to contribute to your child's college fund each month starting with your child's birth in order to accumulate the amount calculated in part 1 by the time she starts college (assuming a term of 18 years.) Construct an annuity table that contains this information and a monthly savings schedule.

- Mortgaging and reverse mortgaging a house
 1. Choose the price of the house you want to buy and a term for the mortgage (20 years or 30 years). Calculate the monthly payment for the mortgage and construct an amortization table that contains this information and a monthly payment schedule.
 2. Calculate the value of your house when you are age 85 based on inflation from the year you bought it (not necessarily this year). This will be the future value of the reverse mortgage annuity. Choose what age you want to retire. The time from your retirement until age 85 will be term of the annuity. Calculate the monthly payment you will receive from the reverse mortgage. Construct an annuity table that contains this information and a monthly payment schedule. In addition, calculate how much this monthly payment at the age you retire is worth in today's dollars.

GRADING:

- 45 points for each of the two parts, 10 points for presentation (100 points total)
- 10 points will be added if the project is submitted by 11:59 PM on Friday, June 15, 2007.
- 5 points per (full or partial) day will be deducted if the project is submitted late.