- For questions involving Excel files, email me the Excel file that shows your solution. Clearly label with appropriate headings the cells in the Excel file so I can understand your solution!

  The Excel file you submit should be your own original creation.

  Remember–when you are using Excel, use new sheets where appropriate (it is usually a good idea to leave original data unaltered in the first sheet, and make modifications on other sheets). Focus on making your Excel file easy for a reader to understand, labeling sheets in a meaningful manner, deleting unnecessary sheets or data, and use AutoShapes for text you wish to include. Also, provide headings or labels to cells that you add, and use color to improve readability.

Problem 1. (40 marks) **(Excel based)**

(a) Create an amortization table in Excel for the mortgage on a house when the purchase price of the house is $98,000, the annual interest rate is 6%, payments are made monthly and the mortgage is 30 years long. Start the mortgage payments on Jan 1, 2009.

You can check your result using any of the online amortization calculators, but remember you might see some slight differences due to rounding.

(b) After four years in your new home, you pay off a car and have some extra cash to apply towards the mortgage. You are able to increase the monthly amount going towards principal by $300 beginning Jan 1, 2013. Note that this is a situation the online amortization calculators cannot handle, nor can the amortization formula, yet this is certainly a possibility for many new homeowners.

How does the payoff date on the mortgage change? How much do you save in interest payments over the calculation in part (a)?

You should modify your Excel solution from part (a) on a new sheet to answer part (b).

The only thing you might need to add to your Excel file when you actually need an amortization formula for a house you are buying would be escrow, but that is fairly easy to add. You can also use the amortization table to calculate car loans, so the time you spend preparing this Excel file will be useful to you in the future!

Problem 2. (20 marks) In a 2/28 "hybrid" adjustable rate mortgage (ARM), the initial interest rate is fixed for 2 years, then is adjusted every six months. Suppose you buy a house with a $200,000 mortgage with a 2/28 ARM with initial rate of 3%, and suppose that two years later the interest rate goes up to 5%.

(a) What were the payments initially, at 3%?

(b) What is your new payment at 5% (careful, the amount of the loan is no longer $200,000, and you have only 28 years to pay it off).