Math 1030 # Workshop #2 **May 31st, 2010**

Name: _____ **Due: Friday, June 4th**

1. Stanley's son is going off to college. So he decided to set up an account which will allow his son to withdraw $200 a month for 4 years.

   (a) If the account earns 4% interest (compounded monthly), how much does Stanley need to deposit at the beginning of the 4 years?

   _____

   Enter the Excel command you used to find your answer:

   (b) Suppose Stanley's son won't be heading off to college for another 10 years. If Stanley can afford to save $65 a month, what interest rate (compounded monthly) would his account have to earn in order for Stanley to reach his goal?

   _____

   Enter the Excel command you used to find your answer:

2. Fred just opened a business and took out a $250,000 loan to purchase equipment. The bank is charging him 8% interest compounded **quarterly**. Fred's loan is to be paid off in 5 years (being paid in equal quarterly payments).

   (a) What is Fred's payment? _____

   Enter the Excel command you used to compute Fred's payment:

   (b) How long would it take Fred to pay off his loan if he made payments of $25,000 each quarter? [Note: Remember Fred is making payments quarterly — you will need to round up the number of quarters.]

   _____ years and _____ months.

   (c) How big would Fred's final payment be if he made full payments of $25,000 each quater?

   _____

3. You go to a car dealer to buy a used pickup. The dealer will sell you the truck for \$15,000 if you use dealer financing. The dealer will finance a 3 year loan at 1.5% interest (compounded monthly). If you pay "cash" the dealer will knock 10% off of the price. Suppose your bank will give you a 3 year car loan at 7% interest (compounded monthly). What should you do? Take the dealer financing or get a bank loan?

   Enter the Excel commands you used to figure out your answer:

4. Scott just bought a \$250,000 house. He put \$50,000 down and took out a 30 year mortgage with a 4.75% interest rate (compounded monthly).

   (a) What is Scott's monthly payment? _____

   (b) How much interest will Scott pay during the first year? _____

   (c) Fill out the following table:

Month	Beg. Bal.	Payment	Interest	Principle	End Bal.
100					
101					

   (d) 15 years into the loan, Scott refinances the balance at a 4% interest rate (compounded monthly). The length of this new mortgage is 10 years. What is his new payment?

   _____

   (e) (Back to the original loan.) If Scott paid an extra \$50 a month, how long would it take him to pay off his house? What would his final (partial) payment be?

   It would take _____ years and _____ months.

   Scotts last payment would be \$_____