Math 1030 **Workshop #2** **Due: July 15th, 2013**

Name: _____

1. Sal needs to buy some equipment for his landscaping business so he took out a $35,000 loan from the bank. He's being charged 6.5% interest compounded *quarterly*.

(a) How long will it take Sal to pay off this loan if he makes $5,000 quarterly payments? [Remember to round up to the next whole period.]

_____ years and _____ months

Record the Excel command(s) you used to find your answer:

(b) Sal's last payment won't be a full $5,000, find the amount of his final (partial) payment.

_____

Record the Excel command(s) you used to find your answer:

(c) Suppose that Sal pays $2,000 per quarter for 3 years, 9 months and then makes a final "balloon" payment at the end of 4 years.

How much will this balloon payment be? _____

Record the Excel command(s) you used to find your answer:

2. Bob just won a big cash prize and wants to put aside some money for retirement. He can open an investment account which earns 10% compounded monthly. Bob plans to deposit a large sum in this account and then, after 20 years, he will start withdrawing $5,000 a month for 35 years. How much money does he need to deposit in this account today?

_____

Record the Excel command(s) you used to find your answer:

3. Frank wants to save up to buy a new boat. He plans to spend about $7,000 on his boat and has a savings account which earns 2% compounded monthly. How much would he have to deposit at the **beginning** of each month (starting now) to have $7,000 at the end of 3 years?

_____

Record the Excel command(s) you used to find your answer:

4. Jane wants to buy a new car which costs \$30,000. The dealer offers her 2 options: (1) Pay cash and get \$3,000 cash back OR (2) Finance the car at 0% for 5 years. If Jane takes option (2), what rate (compounded monthly) is she *really* being charged?

_____

Record the Excel command(s) you used to find your answer:

5. The Smiths just bought a \$450,000 house. They put 20% down and took out a 15 year mortgage with a 2.875% interest rate (compounded monthly).

(a) What is their down payment? _____

What did they borrow? _____

What is their monthly payment? _____

(b) How much interest will they pay during their first year? _____

(c) Fill out the following table:

Month	Beg. Balance	Payment	Interest	Amt. to Principal	End Balance
33					
34					

(d) 5 years into the loan, the Smiths decide to refinance their mortgage. They start a new 15 year mortgage at 3% (compounded monthly). What is their new payment?

_____

(e) (Back to the original loan.) If the Smiths pay \$5,000 a month, how long would it take them to pay off his house? What would their final (partial) payment be?

It would take _____ years and _____ months.

Their last payment would be \$_____