Math 1030 Project 1

(Work in groups of two to four.)

Names _____

_____

_____

_____

Buying a House

Select a house from a real estate booklet, newspaper, or website. Find something reasonable – between $180,000 and $2,500,000. Cut out the picture and/or description of your chosen house and attach it to this project. Assume that you will pay the asking price for your house.

The listed selling price is _____.

Assume that you will make a down payment of 20%.

The down payment is _____. The amount of the mortgage is _____.

Ask at least two lending institutions for the interest rate for both a 15-year and a 30-year fixed rate mortgage with no "points" or other variations on the interest rate for the loan.

Name of first lending institution: _____.

Rate for 15-year mortgage: _____. Rate for 30-year mortgage _____.

Name of second lending institution: _____.

Rate for 15-year mortgage: _____. Rate for 30-year mortgage _____.

Assuming that the rates are the only difference between the different lending institutions, find the monthly payment at the better interest rate for each type of mortgage.

15-year monthly payment: _____. 30-year monthly payment _____.

These payments cover only the interest and the principal on the loan. They do not cover the insurance or taxes.

To organize the information for the amortization of the loan, construct a schedule that keeps track of: (1) the payment number and/or (2) the month and year (3) the amount of the payment, (4) the amount of interest paid, (5) the amount of principal paid, and (6) the remaining balance. There are many programs online available for this. A Microsoft Excel worksheet that does this available online at http://office.microsoft.com/en-us/templates/loan-amortization-schedule-TC001019777.aspx?CategoryID=CT062100751033. It's not necessary to show all of the payments. Fill in the sample of payments in the following schedules, and answer the questions after each table.

15-year mortgage

Payment Number	Payment Date	Payment Amount ($)	Interest Paid ($)	Principal Paid ($)	Remaining Balance ($)
1.					
2.					
50.					
90.					
120.					
150.					
180.					$0.00.
total	- - - - - - -				- - - - - - - - -

Use the proper word or phrase to fill in the blanks.

The total principal paid is the same as the _____.

The total amount paid is the number of payments times _____.

The total interest paid is the total amount paid minus _____.

Use the proper number to fill in the blanks and cross out the improper word in the parenthesis.

Payment number _____ is the first one in which the principal paid is greater than the interest paid.

The total amount of interest is $_____ (more or less) than the mortgage.

The total amount of interest is _____% (more or less) than the mortgage.

The total amount of interest is _____% of the mortgage.

30-year mortgage

Payment Number	Payment Date	Payment Amount ($)	Interest Paid ($)	Principal Paid ($)	Remaining Balance ($)
1.					
2.					
60.					
120.					
240.					
300.					
360.					$0.00.
total	- - - - - - -				- - - - - - - - -

Payment number _____ is the first one in which the principal paid is greater than the interest paid.

The total amount of interest is $_____ (more or less) than the mortgage.

The total amount of interest is _____% (more or less) than the mortgage.

The total amount of interest is _____% of the mortgage.

Suppose you paid an additional $100 a month towards the principal:

The total amount of interest paid with the $100 monthly extra payment would be $_____.

The total amount of interest paid with the $100 monthly extra payment would be $_____ (more or less) than the interest paid for the scheduled payments only.

The total amount of interest paid with the $100 monthly extra payment would be _____% (more or less) than the interest paid for the scheduled payments only.

The $100 monthly extra payment would pay off the mortgage in ____ years and ____ months; that's _____ months sooner than paying only the scheduled payments.

Observations and Reflections:

Summarize what you have done and learned on this project. Because this is a math project, it's good to compare both absolute and relative values that haven't been compared above. It's especially good to compare: (1) the 15-year mortgage to the 30-year mortgage, (2) the 15-year mortgage to the 30-year mortgage with an extra payment, and (3) the 15-year mortgage to the 30-year mortgage with a large enough extra payments to save 15 years and have the loan paid off in 15 years. Also, you know that the numbers don't explain everything. Comment on other factors that must be considered, either by them selves or with the numbers, when making a mortgage.