

MGF2106 Survey of Mathematics: Personal Finance Discussion

Purpose: Work individually or as a group to complete various tasks related to personal finance. In general, a loan is some amount of money that is borrowed and paid back with interest. Common loans consist of car loans, student loans, and credit cards.

Assignment: Complete the project, compiling the various parts into a single document to be submitted to the appropriate Dropbox in Falcon Online. The Discussion Board in Falcon Online may be used to find classmates to work in a group with. If you work as a group, each student must submit the project solutions to the Dropbox in Falcon Online by the posted due date with each group members name on the submission.

Format for Dropbox Submission:

1. The submission should be a single document formatted as either a Word document (.docx; .doc), a Rich Text File (.rtf), or as a PDF.
2. The submission should be typed. If there are parts of the assignment that need to be drawn by hand, they should be done neatly, scanned, and included in the final submission. Please check with your instructor if you have questions about the format of the document.
3. Put your name on the document. If you worked in a group you need to also list the names of the other students in the group.

Part 1: Mortgage

A mortgage is a loan to purchase a home. It is usually paid back over a period of 30 years. The interest rate is determined by the credit rating of the person borrowing the money. Once a person signs the documents to borrow money for a home, they are presented with an amortization table for the mortgage that shows how much of a monthly payment goes towards the interest on the loan and how much of the payment goes towards the principal of the loan.

Questions about Mortgage Loans : Assume you have found a home that you really like and that you will pay back your mortgage over a period of 30 years.

Scenario A) House price = \$125,000; Interest Rate = 4.35%

Scenario B) House price = \$125,000; Interest Rate = 4.5%

Scenario C) House price = \$130,000; Interest Rate = 4.35%

Scenario D) House price = \$130,000; Interest Rate = 4.5%

Use an online mortgage calculator to compute an amortization table for each scenario and answer the following questions. Suggested online mortgage calculator: [Mortgage Calculator from Bankrate.com](#)

1. What are your monthly payments for the loan?
2. If you pay the monthly payment for 30 years, how much will you pay for your home?
3. How much total interest will you pay on your loan?

Questions about other Home Expenses:

Of course, owning a home consists of more than just a mortgage payment. Other required payments for a home include insurance and property taxes. Insurance is based on many factors of a home, but we will approximate insurance to be 1% of the home value. Property taxes for Volusia County average 2% of the home value. For the four scenarios this is summed up in the following table.

Home Value	Insurance	Property Taxes
\$125,000	\$104.17 per month	\$208.33 per month
\$130,000	\$108.33 per month	\$216.67 per month

Another required expense for a home is utilities (unless you would like to live without water and electricity). Lets assume that no matter what price you pay for your house, your utilities will cost \$200 each month.

The average monthly income for a Volusia county resident is approximately \$2500.

4. Using the information above, could an average Volusia county resident afford to purchase and live in each of the houses above? Why or why not?
5. If you were the person that made \$2500 each month, would you purchase one of the homes?
6. What other factors affect your decision?

Part 2: Credit Card

Another type of personal loan is a credit card. A financial institution allows you to charge a purchase to your account, and you are required to pay the financial institution at a later time.

As with other loans, credit cards charge interest. Interest rates can range from 3% - 22%. When you are paying for debt on a credit card, the financial institution will require a minimum balance be paid each month. The higher the interest rate that is charged on the credit card, the larger the minimum payment will be.

Questions about Credit Cards:

A 60% sale is offered at your favorite store, and you think the items are priced so well that you charge \$1200 in merchandise to your credit card. Assume there are two different interest rates for a credit card, 13.6% and 22%.

Use a credit card payment calculator to determine how much you would pay for your items if you were to pay the minimum payment of \$15 each month for the lower interest rate of 13.6% and a minimum payment of \$25 for the higher interest rate of 22%. Suggested online credit card payment calculator: [Credit Card Payment Calculator from CreditKarma.com](#)

For each of the interest rates:

1. How long will it take to pay off the \$1200 deal?
2. What is the amount that you will actually have to pay for the merchandise if you pay the minimum amount?
3. Do you think it is worth charging items that are on sale if you are only going to make minimum payments to the credit card?
4. What are some reasons the interest rates on credit cards vary?
5. What are your opinions on having and using credit cards for your purchases?

Part 3: Student Loans

A personal loan that you might be familiar with is a student loan. There are many different types of student loans. Four of the student loans we will concentrate on are the

1. Stafford Loan
2. Subsidized and Unsubsidized Loan
3. PLUS Loan
4. Private Student Loan

Questions about Student Loans:

Answer the following questions for each of the student loans listed above.

1. Who can obtain these types of loans?
2. When must the loan start being paid back?
3. What is the current interest rate for the loan?

4. When does the institution start adding interest onto the loan balance?
5. What type of student loan would you recommend to someone just entering college? Why?
6. Would your recommendation change if the student was in their last semester of college and had no other way to pay for their classes?

Part 4: Impact Question

Discuss how the information in the Project may impact your current or future spending habits with regards to using credit.