**Assignment 13-1**

**Loan Amortization Activity**

**SHORT ANSWER**

**Instructions:** Use the Loan Amortization Excel spreadsheet to answer the following questions in the five scenarios.

**Scenario 1.** Imagine that you are a first-time home buyer. Rather than buy a new home, you decide to purchase an existing one. You find a nice home in a good location for $163,125. You have a down payment of 20% (which is $32,625) and you decide on a 30-year fixed rate loan. This means that you need to borrow a loan amount of **$130,500**. You shop around and learn that you qualify for an interest rate of **4.8%**. Your monthly (**12**) mortgage payments will begin next year on **January 1st**. Use the loan amortization template excel sheet to answer the questions by entering the above amounts indicated in each question in **cells D5-D8**.

1. What are your scheduled monthly payments on a $130,500 loan at 4.8% over 30 years?

**See cell H5 in the Excel spreadsheet.**

2. Look at the first payment you’ll make (**row 18 in the excel sheet**). How much of the payment goes toward interest and how much toward principal?

3. How much total interest will you pay over the course of the loan on $130,500 at 4.8% over 30 years? **See cell H9**.

4. Considering total interest paid, what is the total cost of the home? Add total interest to the purchase price of the home.

**Scenario 2.** Now, you want some cash to buy some new furniture and carpeting for your home. So you choose to make a down payment of only 10% rather than 20%. Change the loan amortization schedule so now you borrow $147,000. Leave all other entries the same.

5. What are your scheduled monthly payments on $147,000 at 4.8% over 30 years? **See cell H5.**

6. How much total interest will you pay over the course of the loan on $147,000 at 4.8% over 30 years? **See cell H9.**

7. Taking the down payment of 10% into account, what is the total price of the house? To answer, **add** the total price of the home to the total interest paid.

8. Compare the total interest paid with 20% down to the total interest paid with 10% down. In 30 years, do you think the purchase of furniture and carpeting today is worth it? Use economic reasoning to answer.

**Scenario 3.** After thinking about all the interest paid over a 30 year span, you begin considering a 15-year loan. After putting 20% down on a $163,125 house, imagine that you borrow $130,500 for 15 years. The interest charged will be lower given the shorter life of the loan. So you find a 4% mortgage rate.

9. What are your scheduled monthly payments on $130,500 at 4% over 15 years? **See cell H5.**

10. Look at the first payment you’ll make (row 18 in the excel sheet). How much of the payment goes toward interest and how much toward principal on a loan of $130,500 at 4% over 15 years?

11. How much total interest will you pay over the course of a 15-year loan on $130,500 at 4% when monthly payments are made? **See cell H9.**

12. How much total interest do you save with a 15-year loan at 4% compared to a 30-year loan at 4.8% on $130,500? Compare the interest paid on the 15 and 30 year mortgages.

**Scenario 4.** Let’s turn to thinking about a car loan. A car loan is repaid (amortized) over a shorter period of time. Now, you are choosing between buying a new or used car. The used car has relatively low mileage and is in good condition. Both vehicles come with good warranties. You can borrow either $15,000 (new) or $5,000 (used) over 3 years at 6.5% interest.

13. What is your monthly payment if you borrow only $5,000 over 3 years at 6.5% interest for a used car? **See cell H5.**

14. How much in total interest will you pay over the three years on a $5,000 loan over 3 years at 6.5% interest? **See cell H9**.

15. What are your monthly payments if you borrow $15,000 over 3 years at 6.5% interest for a new car? **See cell H5.**

16. How much total interest will you pay over the three years on a $15,000-loan over 3 years at 6.5% interest? **See cell H9.**

17. Will you buy new or used? Explain by comparing benefits and costs. Also discuss from where the funds will come in your zero-based budget when you purchase a car.

**Scenario 5.** Your credit history will impact the interest rate that lenders are willing to offer you. If you have a high credit score, you’ll pay a lower interest rate. If you have a low credit score, you’ll pay a higher interest rate.

18. What are your monthly payments and total interest if you borrow $15,000 over 3 years at 13.0% interest because of bad credit? **See cells H5 and H9**, respectively. Using this data and comparing it to the lower interest earned by a positive credit history, describe what you think about the relationship between your credit score and interest rates. Use economic reasoning to answer.