# **Buying vs. Renting**

**Objective:** For this assignment you will create an Excel Workbook consisting of two worksheets. You will then use it to perform various financial calculations and answer the questions below. Specifically, it will be used to examine whether it is better to buy a home or rent, depending on things such as income, property and income taxes, appreciation, annual percentage rate, etc.

**Mortgages and Taxes:** Lauren and Hank have just gotten married and wish to buy a home. Lauren is a 1st year teacher in Hall County, making $47,598/yr, and Hank is a personal trainer, making $39,500/yr. They found a modest starter house which they are buying for $350,000.

1. They plan to use a wedding gift from their parents of $40,000 to cover the closing costs the bank will charge them, which are 1% of the amount they borrow from the bank. The rest of the savings will be used as a down payment. For example, if they borrow $330,000 using $20,000 for a down payment, the closing costs will be $3,300, which still leaves them some savings. **Determine the largest amount** they can use for a down payment and still pay the closing costs.
2. Open Excel and create a [**30-year amortization schedule**](https://www.investopedia.com/terms/a/amortization.asp), giving monthly payments for the amount they borrowed at a **6.5%** annual interest rate. Title this worksheet **Amortization**. [This webpage](https://www.ablebits.com/office-addins-blog/create-loan-amortization-schedule-excel/) walks you through the process.
3. Use the amortization schedule to compute the total amount of interest they will pay to the bank over the 30 years.
4. Lauren and Hank know that buying a house will save them money on taxes because they get to deduct the interest they pay to the bank each year **and** the property taxes they pay each year. First create a separate worksheet from the amortization schedule. Title this worksheet **Analysis**. In this worksheet, create a column titled Income starting at their combined income. Lauren’s **income** will increase at a rate of 3% per year, and Hank’s **income** will increase at a rate of 5% per year. What is their combined income after 30 years?
5. Next create the following columns in your new Excel worksheet.
   1. **Property Taxes** which are currently $3,100 a year and will also increase by 3% a year.
   2. **Interest** paid to the bank each year (careful here, your amortization schedule is monthly).
   3. **Yearly Deduction**: Do a Google search for Standard Deduction for current year/married filing jointly
   4. **Taxable Income** (Taxable Income = Income – Deductions).
6. Go to [www.savewealth.com](https://www.savewealth.com/) click on Tax Forms, Income Tax Rates, and then Married Filing Jointly to find the tax formula for Lauren and Hank. Create a column computing the yearly **Federal Income Taxes**.
7. Assume the rent is now $1000 a month and will increase by 3% each year. Compute their yearly **Federal Income Taxes** (which are higher when renting because they don’t have the deductions).
8. By renting they are saving a lot of money each year! They pay less for rent than a mortgage, and they don’t pay property taxes (they do however pay more in income tax). Assume the extra money (include the $40,000 in savings as initial deposit) they have from renting versus buying is all invested at 10% a year, and every year their extra money is added to this account. Create a column titled **Extra Money**. How much extra money do they have after 30 years?
9. Assume the house increases in value by 3% a year. Which option ends up with more money for Lauren and Hank to retire on assuming they sell the house after 30 years?
10. Write a paragraph or two reflecting on this assignment. Were there any calculations that were surprising to you? Do you feel this analysis leaves out anything important (this could be something financial that wasn’t included, or something related to quality of life)? For instance, renting might allow for more freedom or flexibility, while buying makes some people feel more secure. Give your opinion about how the analysis might be improved, or explain what aspects of their decision are important but cannot be analyzed numerically.