

Problem Set 1

You are required to turn in a **PDF and Excel file**. Please submit through Brightspace, assignments will not be accepted after September 17 at 11:59pm. You are allowed to work in groups of 2-3 students and turn in one assignment for the group. You can work alone, if desired. Please submit your own work, do not copy from classmates, the internet, or any other sources. Plagiarism will result with a grade of zero for this problem set.

1. Think of a situation you've recently had where agency costs may have been an issue. Describe the agency problem and a potential mechanism to reduce the cost.
2. Use the following information to generate an income statement and balance sheet. Calculate the cash flow from assets, cash flow to stockholders, and cash flow to creditors. Calculate each piece individually and then check your work with the cash flow identity. Please complete this problem in Excel. For full credit your spreadsheet must be professional and use proper references. If I change any of the inputs, the balance sheet, income statement, and cash flow calculations should update automatically.

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	2022	2021
Accounts Receivable	14216	1488
Accounts Payable	3103	9783
Cash	4255	3583
Cost of Goods Sold	9327	
Depreciation	1324	
Interest paid	2189	
Inventory	4668	3873
Long term Debt	9313	13615
Net Fixed Assets	32456	44539
Net Sales	14040	
Notes Payable	2504	356
Retained earnings	10996	10210
Tax rate	21%	

3. You decide to start a business. List the initial transactions needed to start your business and then the transactions that would take place throughout the first year of operations. Using those transactions create the three financial statements (note you will have a balance sheet at the beginning of the year and at the end of the year). You must have at least two (2) non-zero current asset and current liability accounts.
4. You've inherited a large sum of money from your Uncle and have decided to invest it all in one of two companies. Look up the most recent 10Ks for Silk Road Medical (SILK) and General Mills Inc (GIS). For each company calculate one ratio from each of the four (4) groups discussed in-class. Briefly discuss what the ratio means and compare between the two companies, which company is a better investment? Discuss any issues that might exist for

comparing financial ratios for these two companies. (Side note, investing everything into one company is a really bad idea and so is investing based solely on ratio analysis!)

5. You want to buy a SUP in 3 years that cost \$1,349. You think you can earn 6.5% over the 3 year period. If interest is compounded monthly, how much do you need to put away today to be able to afford the new paddle-board in 3 years. Ignore taxes.
6. You want to deposit sufficient money today into a savings account so that you will have \$1,000 in the account five years from today. Explain why you could deposit less money today if you could earn 3.5 percent interest rather than 3 percent interest.
7. You are considering two separate investments. Both investments pay 7 percent interest. Investment A pays simple interest and Investment B pays compound interest. Which investment should you choose, and why, if you plan on investing for a period of 5 years? 10 years? 30 years?
8. Assume you can save \$20,000 a year and will retire at age 65. Why is it important to start saving at age 25 instead of age 30? Assuming an average interest rate of 8.5%, what is the amount of money in your retirement account if you start saving at age 25? 27? 30? What if the interest rate is 10%? Assume annual compounding.
9. Your electric bill is \$111.54 and is due 2/15/2023 if you do not pay by 2/15/2023 your amount due increases to \$119.34. Calculate the APR and EAR if you miss your payment and pay \$119.34 on 2/21/2023. Discuss why APR may be misleading.
10. You decided to buy a new TV to watch college football this year. If you open a store credit card at Best Buy, you will receive a 10% discount on the \$1,000 TV. The balance on your new credit card will be \$900 after the purchase. Assume you make minimum payments of \$25 and the credit card charges an interest rate of 26%. How long will it take you to pay off the TV and what is the total interest you will end of paying? Alternatively, your good friend David offers you a \$1,000 loan at 15% but you would have to pay full price for the TV. Assuming the same minimum payments of \$25 what is the total time needed to pay off the loan and the total interest paid if you borrow from David? Assume the credit card compounds daily and the loan has monthly compounding. How should you pay for your TV?
11. You did really well in your career and want to set up a scholarship for your Alma mater LMU. The scholarship will pay out \$10,000 in its inaugural year, after that it will grow at 2% every year to keep up with inflation. If you think you can earn 8% how much must you put in the account for the scholarship to exist in perpetuity?
12. Mortgage Problem
 - Find a house you want to purchase. (I recommend using Zillow) Use <https://www.zillow.com/sellerlanding/pricingtool/> to find comparable homes. Assuming the asking price is accepted. Find the appropriate mortgage rate for this property for both a 15- and 30- year mortgage. Make assumptions about down payment and credit score to determine the rate and type of loan you are eligible for.
 - Create an amortization table for both the 15-year and 30-year mortgages in Excel. To do this you will need to solve for your monthly mortgage payment. Using this payment and the initial balance you will calculate the following each month: Beginning

Balance, Interest Paid, Principal paid, and Ending Balance. Note: Your ending balance should be zero at the end of the mortgage term. Calculate the difference in total interest paid if you use a 15-year mortgage vs a 30-year mortgage. This table should update automatically if I change the term of the loan, purchase price, or rate. For full credit your spreadsheet must be professional and use proper references. Beyond your monthly mortgage payment, estimate the monthly property tax amount and monthly homeowner's insurance amount.