Exam 2 Review

1. Greg borrowed \$1,000 from a bank on Feb 02, 2024 at a simple interest rate of 5.5%.

   a) How much interest does he owe if he pays back the money on Dec 21, 2024? Use the *Banker's Rule*.

   b) How much interest would Greg owe if we use *ordinary interest*?

2. On Oct 01, 2024, your credit card balance was \$690. On Nov 01, 2024, your credit card company will charge you an interest of \$45 if the balance is unpaid. What is the simple *interest rate* being charged?

3. Sophia opened a CD account some time back and deposited \$65,000 at a simple interest rate of 4.99%. On Nov 17, 2024, her money had grown by \$1,100. Find the date when Sophia opened the account. Be sure to use the *Banker's Rule*.

4. You take a loan of \$1,000 on Jan 15, 2024, and the due date is Dec 15, 2024. The simple interest rate is 6.5%. Find the total amount due on the due date.

5. Amie and John estimate that they want to buy a house for \$ 250,000 and they want to make a down payment of 12.5% on the house. If they have 27 months to save for the down payment, how much should they invest in an account earning 3.9% interest compounded monthly so that they reach their goal?

6. A toy store owner would like to borrow \$35,000 to increase her stock. The bank will give the owner a loan at an interest rate of 9.5% compounded weekly. How much will the owner end up paying if she pays back the loan in 3 years?

7. Terry invests \$5,000 in an account that earns 4.5% compounded weekly for 3 years and thereafter earns 5.5% compounded monthly. How much money will Terry have after 8 years?

8. Which investment is better: an investment that earns 5.5% compounded quarterly or an investment that earns 5.4% compounded monthly? Explain/show all work.

9. Calculate the inflation rate between Feb, 2021 and Feb 2023. Suppose that in Feb 2021, Mustafa invested $10,000 in an account that earned 4.5% compounded monthly and that the maturity date for the investment is Feb, 2023. Does this investment beat inflation?

10. When Stacy was born in 2005, her parents got cash gifts that amounted to $5,000. They decided to open an account for Stacy and deposit all the money. The fixed interest rate on the account was 6.99% compounded monthly. How much will Stacy have when she turns 18? When you account for inflation, was the investment profitable? Explain how you know.