Math 170: Sections 2.1, 2.2 Worksheet

1. An investment earns 2% per year and is worth \$10,000 after 5 years. Find the present value.

2. An investment earns 6% per year and is worth \$30,000 after 20 months. Find the present value.

3. You take out a 6-month, \$5,000 loan at 8% simple interest. How much would you owe at the end of the 6 months?

4. In December 2008 (in the midst of the financial crisis) a \$5,000 6-month T-bill was selling at a discount rate of only 0.25%. What was its simple annual yield?

5. A \$4,000 loan, taken now, with a simple interest rate of 8% per year, will require a total repayment of \$4,640. When will the loan mature?

6. You take out a 3-year, $7,000 loan at 8% simple annual interest. The lender charges you a $100 fee. Thinking of the fee as additional interest, what is the actual annual interest rate you will pay?

7. Calculate, to the nearest cent, the future value of an investment of $10,000 at 3% per year, compounded annually, after 10 years.

8. Calculate, to the nearest cent, the future value of an investment of $10,000 at 11.2% per year, compounded weekly, after 12 years.

9. Calculate, to the nearest cent, the present value of an investment that will be worth \$1,000 after 5 years, at 6% per year, compounded daily.

10. Find the effective annual interest rate of 10% compounded hourly (assume 365 days per year).

11. Find the effective annual interest rate of 10% compounded daily (assume 365 days per year).

12. You deposit \$1,000 in an account at the *Lifelong Trust Savings and Loan* that pays 6% interest compounded quarterly. By how much will your deposit have grown after 4 years?

13. You want to buy a 10-year zero coupon bond with a maturity value of \$5,000 and a yield of 5.5% annually. How much will you pay?

14. When I was considering what to do with the $10,000 proceeds from my sale of technology stock, my broker suggested I invest half of it in municipal bonds, whose value was growing by 6% per year, and the other half in CDs, which were yielding 3% per year, compounded every 2 months. Assuming that these interest rates are sustained, how much will my investment be worth in 10 years?