MTH 351
Half Exam 2
Fall 2020

50 points possible.

1. (10 pts.) An annuity pays \$800 every quarter for ten years. The annual rate of interest is 12% convertible quarterly. Find each of the following:

(a) the PV of the annuity one quarter before the first payment;

(b) the PV of the annuity on the day of the first payment;

(c) the FV of the annuity on the day of the last payment.

2. (10 pts.) An annuity pays 300 at the end of each month for 15 years. Calculate the present value of the annuity using an annual effective interest rate of 9%.

3. (10 pts.) What is the present value of a 10 year immediate annuity with annual payments at an annual effective interest rate of 8% where the first payment is \$400 and each payment thereafter is increased by 6%?

4. (10 pts.) An annuity pays \$200 at the end of one month. It pays \$240 at the end of the second month. It pays \$280 at the end of the third month. The payments continue to increase by \$40 each month until the last payment is made at the end of the 48th month. Find the present value of the annuity at 6% compounded monthly.

5. (10 pts.) Hollis deposits X into a savings account at time 0, which pays interest at a nominal rate of i, compounded semiannually.

Reilly deposits $3X$ into a different savings account at time 0, which pays simple interest at an annual rate of i.

Hollis and Reilly earn the same amount of interest during the last 6 months of the 5th year.

Calculate i.