

MATH 210 THEORY OF INTEREST SPRING 2016
PROFESSOR WANG

Homework 6 (max. points = 10)

Due at the beginning of class on Thursday, March 10, 2016

You are encouraged to work on these problems in groups of no more than 4. However, each student must hand in her/his own answer sheet. Please show your work enough to show that you understand how to do the problem -and circle your final answer. Full credit can only be given if the answer and approach are appropriate. Please give answers to two decimal places -e.g., $xx.xx\%$ and $\$xx,xxx.xx$.

Section 4.3. (4)

Section 4.4. (1)(a)

Section 4.5. (2)

Section 4.6. (2)

Section 2.3. (2)

Section 2.4. (3)

Additional Problems.

1. Anna buys a 10-year increasing annuity for X . She will receive 2 at the end of the first month, 4 at the end of the second month, and for each month thereafter the payment increases by 2. The nominal interest rate is 9% convertible quarterly. Find X .
2. What is the internal rate of return on a project that requires a \$20,000 investment now, and provides returns to the investor of \$12,000 one year from now and \$12,000 two years from now?
3. A three-year continuous annuity pays a total of \$100 during the first year, \$300 during the second year, and \$900 during the third year. Within each year, the payments are made continuously and evenly throughout the year. The effective annual interest rate is 10%. Find the present value of this annuity.
4. Suppose a project requires you to invest \$300 now, and \$120 two years from now. The project returns \$400 one year from now. Find all the yield rates (internal rates of return) of this project. Then, find the range of annual effective interest rates which will produce a net present value greater than zero.