

REI 432 - Real Estate Finance

Fall 2008

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Homework #3 - Due in class on Monday, November 3

Show all your work in solving the problems. You don't need to provide formulas but do need to show all calculator keystrokes to get full credit for your answers.

1. A home was recently appraised for \$300,000, and a lender has approved a reverse annuity mortgage (RAM) for 60% of the home's value to be paid over 10 years at a cost of 8.5%. If the borrower chooses to take monthly payments, how much will they be?
2. A basic adjustable rate mortgage (ARM) is made for \$425,000 over 30 years with a starting interest rate of 7%.
  - a. What are the payments in the first year?
  - b. If the interest rate drops to 6% at the beginning of the second year, how much will payments be in the second year?
3. A borrower considers an adjustable rate mortgage for \$350,000 over 30 years. The starting value of the cost of funds index is 4%, and the margin is 2%. The cost of funds index is expected to rise to 5% next year and 7% in two years. The loan has an annual interest rate cap of 1.5% and a life of the loan cap of 4%. What are the required payments on the loan for the first three years?
4. A borrower has cash for a downpayment on a \$200,000 home but is deciding between two loan options. The first loan is a 90% loan over 15 years for \$180,000 at 6%. The second loan is a 80% loan over 15 years for \$160,000 at 5%. Find the incremental borrowing cost. Which loan should the borrower take and why?
5. You currently have a mortgage for \$150,000 at 5.5% for 30 years. Mortgage rates have fallen to 5%, and you are thinking about refinancing after 5 years. You find a good deal online for a new 25 year loan with closing costs of only \$1,500. Should you refinance? (*Remember you need to compute the cost of refinancing as an interest rate.*)
6. Bank of America is holding a mortgage loan for \$600,000 at 8% for 25 years. The loan was originated 5 years ago, and Bank of America wants to sell it in the market now where rates are 10%. What is the market value of this mortgage?
7. You are evaluating the following lease options over the next 3 years:
  - a. Net lease with steps: Rent is \$18 per square foot for the first year and increases \$2.50 per year. All operating expenses are passed through to the tenant.

- b. Gross lease: Rent is \$25 per square foot each year with the lessor responsible for all operating expenses. Expenses are estimated to be \$6 during the first year and to increase to \$7 in the second year and \$9 in the third year.
  - c. Gross lease with expense stop and CPI adjustment: Rent is \$20 during the first year. A CPI adjustment of 4% is expected in the second year and 2% is expected in the third year. Expenses should increase at the same rate as the CPI and should be \$6 during the first year. Thus, the expense stop is set at \$6.
- What is the effective rent for each lease alternative if the discount rate is 11%?