

Math 1303 Homework 20

Note Title

4/23/2009

① Warm-up questions:

- a) What is 5.25% of \$3,211.00?
- b) A drop in price from \$29.94 to \$25.99 is a drop by how many percent?
- c) A foreclosed property sells at 40% of its original value. If it is sold for \$80,000, what was the original value?

② Compound interest questions.

- a) If you invest \$250 at 3.5% over 4 years, how much money do you end up with if there is
 - i) no annual compounding
 - ii) monthly compounding
 - iii) continuous compounding
- b) Suppose that over a 7-year period, \$1,000 accumulated to \$1,835 in an investment certificate that compounded interest monthly. Find the nominal interest rate for this investment.

③ Effective versus nominal rate of interest

- a) What is the effective rate of 12% compounded daily (assume 365 days per year)

b) How many years will it take for money to double at an effective rate of 10%?

c) A major credit card company has a finance charge of 1.5% per month on outstanding debt.

i) What is the nominal rate compounded monthly?

ii) What is the effective rate?

d) What nominal rate of interest, compounded monthly, corresponds to an effective rate of 4.5%?

④ Future and Present Value

a) Use Excel to find the future value of \$350 at 5%, compounded monthly, after 3 years? Write down the answer and the formula used.

b) Use Excel to find the present value of \$1000, invested at 7% compounded quarterly, due in 4 years? Give the answer and the formula used.

c) I am planning to have \$60,000 available to support my child's college cost, due in 15 years. I can afford monthly payments of \$280 and invest them at 4%, compounded monthly. What should my downpayment be? Use Excel!

d) A jewelry store advertises a \$1,000 ring by promising to add a \$1000-bond to the purchase for free. The bond earns interest at a rate of 7.5%, compounded monthly, and comes due in 25 years. How much of a discount does this really amount to?

e) I want to buy a 52 inch, 1080p, LCD TV at Best Buy. They offer 5% interest, compounded monthly, over 3 years. My budget allows for \$50 a month. What price TV can I afford? Can you find a TV for that price?