Homework 3 – Due 7 September 2011

Math 1140 Financial Mathematics

Collaboration Policy: You are encouraged to collaborate with your fellow students on this homework. You must turn in individual solutions and you are not allowed to use any written, typed, or recorded artefact from the meeting with your classmates.

Pledge: On my honor, I pledge that I have neither given nor received *unauthorized aid* on this assignment.

Name(use block letters):   **Signature:**

Notices:

1. Homework turned in on a piece of paper ripped off from your notebook or with illegible handwriting will not be graded.
2. Typing the homework is strongly encouraged!
3. If the pages are not stapled you assume the risk of having graded only the first page!
4. Remember what I said in the syllabus
   Your homework answers should be clear, concise, and correct. The **examples in the textbook** are an excellent model. Note the explanations that accompany the calculations. You need to **show your work** and explain the meaning of every variable.

Please solve the following:

1. Exercise 26, page 13
   On 5 February 2008 Pierce has $10,000 in savings. The next date that interest is posted (added) to his account is 1 June 2008. If Pierce withdraws his money early, he will lose all the interest on the amount withdrawn. On 8 April 2008, Pierce needs $8,000 for medical bills. If he can get a loan at 10% interest, should Pierce withdraw the money from his savings account or should he get a loan?
   Use exact time with ordinary interest.

For the rest of the homework, flip the page.

2. Exercise 12, page 17
   Brittany owes $50,000 on December 2003 and $40,000 on March 2004. Find the single value in February 2005 that she must pay to repay both amounts if money is worth 7% simple interest.

3. Exercise 16, page 17
   If Aaron buys $5,520 worth of building materials for his basement renovations and he receives an invoice with 3% discount if the bill is paid within 10 days and the net due in 45 days. What rate of interest will he earn if he makes his payment of the 10th day?

4. Exercise 12, page 22
   A tax free municipal security is bought in March 2005 and matures to $40,000 in September 2005. In July 2005 this security is sold to a third party requiring 10%. Find the amount the third person paid for the municipal security.
   Find the actual interest the original holder lost on his investment.
   Why would the original holder ever sell?

5. Exercise 14, page 26
   Randall buys a $500 chocolate lab puppy in June 2004 and agrees with the breeder to make three equal payments in December 2004, June 2005, and December 2005. If the breeder charges 10% for credit, find the amount of the three payments. Put the focal date at December 2005.

6. Exercise 12, page 29
   A&R Plumbing contracts for a new home plumbing job. The contract stipulates that the homeowner will pay A&R $15,400 in six months if the job is complete. Supplies are estimated to cost A&R $11,200 now. Assuming the job is done on time, find the NVP at 70% and the IRR.