FINITE MATH, FALL 2016 - PROBLEM SET 1

Name: _____ Score: _____/ 50

Use this worksheet as the cover sheet for your write-up: write your name on this page, and staple this sheet to the front of your homework packet.

You will receive no credit for submitting solutions that the grader cannot read and understand—be sure to write legibly!

Problem 0.1. Find the simple interest on the following:

(1) \$25000 at 3% for 9 months.
(2) \$4289 at 4.5% for 35 weeks.

Problem 0.2. Find the interest rate for each deposit and compound amount for each deposit and the amount interest earned of the following:

(1) \$15000 at 6% compounded semiannually for 12 years
(2) \$8500 at 8% compounded quarterly

Problem 0.3. Find the effective rate corresponding to each nominal rate:

(1) 4% compounded quarterly
(2) 7.25% compounded semiannually

Problem 0.4. Find the present value (the amount that should be invested now to accumulated the following amount) if the money is compounded as indicated:

(1) \$12820.77 at 4.8% compounded annually for 6 years.
(2) \$2000 at 6% compounded semiannually for 8 years.

Problem 0.5. *Comparing Investments*
As the prize in a contest, you are offered \$1000 now or \$1210 in 5 years. If the money can be invested at 6% compounded annually, which is larger? Show why.

Problem 0.6. If interest is compounded more than once per year, which rate is higher, the stated rate or effective rate?

Problem 0.7. Find the time required for \$5000 dollars, deposited at 4% compounded quarterly , to reach at least \$9000.

Problem 0.8. Suppose that \$10000 is invested at an annual rate of 5% for 10 years. Find the future value if interest is compounded as follows:

(1) Annually
(2) Quarterly
(3) Monthly
(4) Daily (use 365 days)
(5) Continuously

Date: September 2nd, 2015.

Problem 0.9. In the previous exercise, hopefully you noticed that as the money is compounded more often, the compound amount becomes larger and larger. Is it possible to compound often enough so that the compound amount is \$17000 after 10 years? Explain.

Problem 0.10. A bond with a face value of \$10000 in 10 years can be purchased now for \$5988.02. What is the simple interest rate?