Math 1620 Exam 3

Exam 3 sections 10.1, 10.2, 10.3, 13.2, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6

1. There will be a total of 20 - 25 problems on the exam. The exam will have 2 sections: Matching and Short Answer.

2. For 10.1: Be able find the complement and supplement of a given angle. Given a diagram with intersecting and/or parallel lines, be able to determine angle measures.

3. For 10.2: Be able to find angle measures given intersecting lines, parallel lines and triangles in a diagram. Determine lengths of sides of triangles using either similar triangles or Pythagorean Theorem.

4. For 10.3: Be able to name polygons, determine the sum of all the angles in a given polygon and determine the measure of the angle of a regular polygon. Find the perimeter of a figure with some or all side lengths given. For a given tessellation, name the types of regular polygons (and their angles) around each vertex. From lecture – know what types of polygons can tile the plane.

5. For 13.2: Be able to answer questions about a mathematical system given to you in a table regarding closure, identity element, inverse elements and associative properties. Be able to perform modular arithmetic and multiplication.

6. For 8.1: Be able to determine the sales tax on an item and the total cost of the item. Be able to determine the discount amount on an item and the sale price of an item. Be able to determine the percent change of an item given an item’s original price and new price.

7. For 8.2: Be able to find the interest on a specified simple interest loan. Determine the future value of a simple interest loan/savings account. Be able to answers questions on discounted loans.

8. For 8.3: Be able to determine the future value, and interest accrued, of an investment that has compound interest. Be able to calculate the future value given an investment that compounds continuously. Be able to determine the principal needed to invest in an account that earns compound interest. Be able to compute the effective annual yield of a given investment.

9. For 8.4: Be able to determine the value of an annuity. Determine the regular annuity (deposits) payments needed to meet a specific financial goal. Understand how to read a stock table.

10. For 8.5: Determine the amount financed, the installment price, the finance charge and the APR for a fixed loan. Compute the unearned interest and the payoff amount for a loan paid off early. Determine the interest on a credit card using the three methods presented in the text. I will provide the APR table from this section for determining APR on a fixed loan.

11. For 8.6: Compute monthly payments and interest costs (including points) for a mortgage. Compute payments and interest for other types of loans (car, credit card). Compute new monthly payments if you shorten term of loan and determine the savings in interest.

12. You are also allowed to bring one 8.5 by 11 piece of paper, handwritten, with whatever notes and formulas you would like on it. You will need to use a calculator on several of the problems in the exam.

13. A list of formulas that I will provide follows. If there are others from the sections you want, you will need to include them on your 8.5 by 11 sheet of paper. Note that you need to know what each variable represents.
Chapter 8 Formulas:

Simple Interest

\[ I = Prt \]
\[ A = P(1 + rt) \]

Compound Interest

\[ A = P \left( 1 + \frac{r}{n} \right)^{nt} \]

Continuous Compounding

\[ A = Pe^{rt} \]

Effective Annual Yield

\[ Y = \left( 1 + \frac{r}{n} \right)^n - 1 \]

Value of an Annuity

\[ A = \frac{P \left[ (1 + \frac{r}{n})^n - 1 \right]}{\frac{r}{n}} \]

Actuarial Method for computing Unearned Interest

\[ u = \frac{kRV}{100 + V} \]

Rule of 78 for computing Unearned Interest

\[ u = \frac{k(k + 1)}{n(n + 1)} \times F \]

Loan Payment Formula for installment loans

\[ PMT = \frac{P \left( \frac{r}{n} \right)}{1 - (1 + \frac{r}{n})^{-nt}} \]