

# Math 90 Sequence of Topics

## REVIEW

R1-R6 – Elementary Algebra Review including Factoring of Polynomials and Working with Rational Expressions and Equations

## FUNCTIONS AND GRAPHS

- 7.1 Introduction to Functions
- 7.2 Domain and Range
- 7.3 Graphs of Functions
- Supplement 2.5 Transformations
- 7.4 The Algebra of Functions
- 7.5 Formulas, Applications and Variations

## SYSTEMS OF LINEAR EQUATIONS AND PROBLEM SOLVING

- 8.1&8.2 Systems of Linear Equations (Introduction and Solving by Substitution and Elimination)
- 8.3 Solving Applications Involving Systems of Equations
- 8.4 Systems of Equations in Three Variables
- 8.5 Applications of Systems with Three Variables
- 8.6 Elimination Using Matrices
- 8.7 Determinants and Cramer's Rule

TEST 1

## INEQUALITIES AND PROBLEM SOLVING

- 9.1&9.2 Inequalities, Applications, Intersections, Unions and Compound Inequalities
- 9.3&9.4 Absolute Value Equations and Inequalities – Inequalities in Two Variables

## EXPONENTS AND RADICALS

- 10.1&10.2 Radical Expressions and Functions and Rational Numbers as Exponents
- 10.3 Multiplying Rational Expressions
- 10.4 Dividing Rational Expressions
- 10.5 Expressions Containing Several Radical Terms
- 10.6 Solving Radical Equations
- 10.7 Distance Formula, Midpoint Formula, Special Triangles
- 10.8 The Complex Numbers

## QUADRATIC FUNCTIONS AND THEIR EQUATIONS

- 11.1 Quadratic Equations
- 11.2&11.3 The Quadratic Formula and Studying Solutions of Quadratic Equations
- 11.4 Applications Involving Quadratic Equations
- 11.6 Quadratic Functions and Their Graphs (mention of 11.5 – Reducible to Quadratic)
- 11.7 More About Graphing Quadratic Equations  $f(x)=ax^2+bx+c$
- 11.8 Problem Solving and Quadratic Functions – Max and Min
- 11.9 Polynomial Inequalities and Rational Inequalities

TEST 2

## EXPONENTIAL AND LOGARITHMIC FUNCTIONS

- 12.1 Composite Functions and Inverse Functions
- 12.2 Exponential Functions
- 12.3 Logarithmic Functions
- 12.5 Common Logarithms and Natural Logarithms
- 12.4 Properties of Logarithmic Functions
- 12.6 Solving Exponential and Logarithmic Functions
- 12.7 Applications of Exponential and Logarithmic Functions

TEST 3

## CONIC SECTIONS

- 13.1 Parabolas and Circles
- 13.2 Ellipses
- 13.3 Hyperbolas

## SEQUENCES, SERIES, THE BINOMIAL THEOREM AND PROBABILITY

- 14.1 Sequences and Series
- 14.2 Arithmetic Sequences and Series
- 14.3 Geometric Sequences and Series

TEST 4

## QUADRATIC FUNCTIONS AND EQUATIONS

- Supplement 8.5&8.6 Combinatorics: Permutations and Combinations
- 14.4 The Binomial Theorem
- Supplement 8.8 Probability

CUMULATIVE FINAL EXAM