

Math 127  
Exam 1 Review Sheet

**Section 1.1: Real Numbers**

**Key Topics:**

- Memorize the different sets of numbers (Natural, Whole, Integers, Rational, Irrational, Real, and Complex numbers).
- Memorize the properties of real numbers (commutative, associative, distributive, identity elements, additive inverses (opposites), and multiplicative inverses (reciprocals)).
- Understand how to carry out real number operations on fractions.
- Understand inequalities and absolute value.
- Know and be able to use scientific notation.

**Section 1.2: Exponents and Radicals**

- Understand and be able to apply the properties of exponents.
- Be able to simplify expressions involving exponents.
- Understand and be able to simplify expressions involving negative and rational exponents.
- Understand radical notation, including when a radical is undefined.
- Be able to simplify radical expressions (including rationalizing denominators).

**Section 1.3: Algebraic Expressions**

- Understand the definition of a polynomial.
- Be able to carry out operations on polynomials (addition, subtraction, multiplication, division by a monomial).
- Be able to factor polynomials (greatest common factor, trinomials, grouping, difference of squares, perfect squares, cube formulas)

**Section 1.4: Fractional Expressions**

- Understand the definition of fractional and rational expressions and be able to find the domain of a rational expression.
- Be able perform operations on rational expressions (sums, differences, products, and quotients).
- Be able to simplify rational expressions and complex fractions.

**Sections 2.1: Equations**

**Key Topics:**

- Understand the definitions of equations, linear equations, solution sets.
- Be able to solve linear equations and equations that are linear in form.
- Understand what conditional, identity, and inconsistent equations are.
- Be able to solve for one variable in terms of other variables in a multivariate equation.

**Review Problems: Chapter 1 # 3, 6, 15, 22, 35, 39, 45, 50, 57, 60, 61, 64, 79**

**Review Problems: Chapter 2 # 1, 2, 3, 4, 45**