

Section R.1 Basic Properties and Definitions

- Order of operations: Parentheses, Exponents, Multiplication/Division, Addition/Subtraction
- Set Notation and Set Operations: Union, Intersection, Containment, \in , \notin , and the Empty Set, \emptyset .
- Sets of Numbers: Counting numbers, Whole numbers, Integers, Rational numbers, Irrational numbers, Real numbers
- Prime numbers, prime factorization, factor trees, reducing fractions

Section R.2 Properties of Real Numbers

- Opposites and Reciprocals
- Multiplying fractions, Adding fractions, Least common denominators
- Absolute Value
- Properties of real numbers: the Associative property, the Commutative property, the Distributive property, Additive and Multiplicative inverses.
- Simplifying expressions using properties of real numbers

Section R.3 Arithmetic of Real Numbers

- Adding and Subtracting Real numbers
- Multiplying and Dividing Real numbers
- Dividing fractions, division involving zero.

Section R.4 Exponents

- Properties of Exponents
- Negative Exponents
- Simplifying Expressions involving Exponents

Section R.5 Operations on Polynomials

- The definition of terms and polynomials
- The degree and leading term of a polynomial
- Adding and Subtracting Polynomials
- Multiplying Polynomials (Using the distributive property, the FOIL method, or vertical multiplication)
- Squares of binomials, multiplying the sum and difference of two terms

Section R.6 Factoring

- Greatest Common Factors
- Factoring by Grouping
- Factoring trinomials using Trial and Error (Guess Check)
- Factoring trinomials using the “ac” - split
- combining more than one factoring method

Section R.7 Special Factoring

- Perfect Squares
- The Difference of Squares
- Sums and Differences of Cubes
- Overview of Factoring Methods

Practice Problems: Chapter Review page 94-96 # 4, 7, 8, 10, 12, 17, 21, 24-26, 31, 34, 38, 49, 57, 58, 62, 70, 82, 89, 92, 95, 98, 101, 103, 107, 111, 113, 116, 117, 121, 123, 124, 127, 131