Elementary Algebra, 3rd Edition

by Robert H. Prior

Tables of Contents (Updated 8-20-11)

Chapter 0, a Pre-Algebra Review, is currently on-line only:
http://bobprior.com/MAT52Ch0/MAT52Ch0.html

Chapter 4 Graphing Lines

Chapter 5 Systems of Linear Equations

Chapter 6 Exponents and Polynomials

Sec 6.1 Rules of Exponents
Exponent as repeated multiplication; the first power; the product rule; zero power; the quotient rule; zero power rule; the distributive property for exponents; and power to a power.

Sec 6.2 Rules of Negative Exponents
Understanding negative exponents; rule of negative exponents; negative exponents and fractions; and using negative exponents with other exponent rules.

Sec 6.3 Scientific Notation
Base-10 and negative exponents; working with powers of 10; scientific notation; the coefficient; writing large numbers in scientific notation; writing small numbers in scientific notation; expanding from scientific notation; adjusting the coefficient; and multiplying and dividing with scientific notation.

Sec 6.4 Introduction to Polynomials
Definitions related to polynomials: terms, coefficient, constant, degree of term, descending order, lead term, degree of polynomial; monomials, binomials, etc.; combining like terms; and evaluating polynomials for given replacement value.

Sec 6.5 Adding and Subtracting Polynomials
The distributive property (multiplier of 1 and -1); adding polynomials; and subtracting polynomials.

Sec 6.6 Multiply Polynomials
The product of two monomials; squaring a monomial; the product of a monomial and a polynomial; and the product of two polynomials.

Sec 6.7 Multiplying Binomials
The FOIL method; multiplying binomials in one step; squaring a binomial; recognizing perfect squares; conjugates; difference of squares; and recognizing conjugates

Sec 6.8 Dividing Polynomials
Dividing one monomial by another; dividing a polynomial by a monomial; and dividing a polynomial by a binomial using long division. (Within this section, there are five subsections that prepare the student for long division.)

Chapter 7 Factoring

Sec 7.1 Factoring Polynomials: The Greatest Common Factor
Factors and multiplication; the greatest common factor (GCF); distributing monomials; factoring out a common monomial factor; and factoring when the lead term is negative.

Sec 7.2 Factoring by Grouping
Factoring out a common binomial factor; Factor by Grouping; and the Factor Game (from Section 1.7).

Sec 7.3 Factoring Trinomials, $a > 1$
Factoring trinomials and "FOIL;" identifying the Key and Sum numbers of the Factor Game; using the Factor Game with Factor by Grouping to factor trinomials of the form $ax^2 + bx + c$, $a > 1$; and prime polynomials.

Chapter 10 Quadratic and Rational Equations

Appendix (Available upon request for Fall 2011)