

Integrated Algebra Curriculum 2008 - 2009

Unit I ~ Introduction to Algebra

- Sets (union, intersection, interval notation, Venn Diagram representation of sets)
- Properties of numbers (including closure, identity)
- Order of operations - with evaluating (1.3)
- Translating expressions and equations (1.4)
- Multiplying monomials (variable monomials) (2.5)
- Distributive property (with variables) (2.6)
- Dividing monomials (variable monomials) (2.7)
- Introduction to Functions (1.7)
- Functions and Relations (4.8)

Unit II ~ Solving Equations

- Multi-step equations (3.3, 3.6)
- Variables on both sides (3.4)
- Word Problems
- Literal Equations (3.7)
- Solving Inequalities (6.2)
- Solving Absolute-Value Equations (2.1) , (6.4)

Unit III ~ Word Problems

- Coin Problems
- Consecutive Integer Problems
- Perimeter Problems
- Number Problems

Unit IV ~ Graphing Equations

- Graphing Linear Equations by table: (Calc)
 - given the domain
 - not given the domain
- Finding Slope
- Writing the Equation of a Line when given: (5.1 - 5.3)
 - the slope and an intercept
 - one point and the slope
 - two points
- Graph a line by slope-intercept (4.6)
- Graphing Linear Inequalities (6.5)
- Graphing Absolute-Value Equations (6.5) (by hand and by calc)

- Graphing Exponential Growth Equations (8.5, 8.6)
- Comparing Linear, Exponential, and Quadratic graphs (9.8)

Unit V ~ Measurement in Geometry

- Area of geometric figures
- Surface area of rectangular prisms and cylinders
- Area of shaded regions

Unit VI ~ Operations with Polynomials

- Multiplying Exponents (8.1)
- Zero and Negative Exponents (8.2)
- Division of Exponents (8.3)
- Scientific Notation (8.4)
- Adding/Subtracting Polynomials (10.1)
- Multiplying Polynomials (10.2)
- Special Products (10.3)
- Factoring : GCF (10.5, 10.8)
Trinomial
DOTS
- Factoring Completely

Unit VII ~ Solving and Graphing Quadratic Equations

- Solving Quadratic Equations by Finding Square Roots (9.1)
- Simplifying Square Roots (9.2)
- Operations with Square Roots (12.2)
- Solving Polynomial Equations in Factored Form (10.4)
- Solving Quadratic Word Problems

Unit VIII ~ Graphing Quadratics

- Graphing a Quadratic Equation (9.3)
- Solving a Quadratic Equation by Graphing (9.4)

Unit IX ~ Systems of Equations and Inequalities Ch. 7

- Solving Algebraically
 - Substitution
 - Elimination
- Word Problems
- Solving Graphically: Equations
Inequalities
- Solving a Linear-Quadratic System: Algebraically
(factorable quadratics only) Graphically

Unit X ~ Ratio, Proportion, Rational Expressions

- Rates, Ratios, Percents, Proportion (3.8), (11.1),(11.2)
- Dimensional analysis
- Pythagorean Theorem (12.5)
- Trigonometry (12.7)
- Direct Variation (11.3)
- Simplifying Rational Expressions (11.4)
- Multiplying/Dividing Rational Expressions (11.5)
- Adding/Subtracting Rational Expressions (11.6)
(like denominators - binomials)
- Dividing Polynomials (11.7)
- Relative error

Unit XI ~ Statistical Graphs

- Scatter Plots (4.1)
- Line of Best Fit (5.4)
- Tables and Graphs (1.6)
- Measures of Central Tendency (6.6)
- Histograms
- Cumulative Frequency Histograms
- Box & Whisker Plots (6.7)
- Qualitative & Quantitative data
- Univariate & Bivariate data
- Bias
- Correlation & Causation

Unit XII ~ Probability

- Counting Principle
- Arrangements
- Permutation
- Probability (not odds) (2.8)
- Complement
- Sample Space
- Tree Diagrams
- Empirical Probability
- Mutually Exclusive Events
- Dependent Events
- Independent Events
- Conditional Probability