

8/29/03

MA 1010
ALGEBRA/TRIGONOMETRY REVIEW
SYLLABUS

Review course in algebra and trigonometry. Covers the real number system, exponents and radicals, algebraic expressions and operations, linear and quadratic equations, inequalities, functions and graphs, polynomials and their zeros, rational functions, exponential and logarithmic functions, basic trigonometry.

TEXT: Intermediate Algebra (4th Edition), by Mark Dugopolski, McGraw – Hill, ISBN 0-07-229466-3

LSN	TOPIC
1	The Real Numbers (Rational Numbers, Graphing on the Number Line, Irrational Numbers) READ: IA, Sec 1.2
2	Operations on Real Numbers (Absolute Value, Addition, Subtraction, Multiplication, Division, Division by Zero) READ: IA, Sec 1.3
3	Evaluating Expressions (Arithmetic Expressions, Exponential Expressions, Square Roots, Order of Operations, Algebraic Expressions) READ: IA, Sec 1.4
4	Properties of Real Numbers (Commutative, Associative, Distributive, Identity, Inverse, Multiplication properties of Zero) READ: IA, Sec 1.5
5	Using the Properties (Computation, Like Terms, Combining Like Terms, Products and Quotients, Removing Parentheses) READ: IA, Sec 1.6
6	QUIZ 1
7	Linear Equations (Basic Ideas and Definitions, Solving Equations, Types of Equations, Solving Strategies, Techniques, Applications) READ: IA, Sec 2.1
8	Inequalities (Basic Ideas, Interval Notation and Graph, Solving Linear Inequalities, Applications) READ: IA, Sec 2.4
9	Compound Inequalities (Basics, Graphing the Solution Set, Applications) READ: IA, Sec 2.5
10	Absolute Value Equations (Absolute Value Equations, Absolute Value Inequalities, Applications) READ: IA, Sec 2.6

- 11 **QUIZ 2**
- 12 **Graphing Lines in the Coordinate Plane** (Ordered Pairs, Plotting Points, Midpoint and distance, Graphing Linear Equations, Using Intercepts for Graphing, Applications, Functional Notation)
READ: IA, Sec 3.1
- 13 **Slope of a Line** (Definition, Using Coordinates to Find Slope, Parallel Lines, Perpendicular Lines, Applications)
READ: IA, Sec 3.2
- 14 **Forms of the Equation of a Line** (Point-Slope Form, Slope Intercept Form, Standard Form, Graphing, Linear Functions)
READ: IA, Sec 3.3
- 15 **Linear Inequalities and Their Graphs** (Definition, Graphing, The Test Point Method, Graphing Compound Inequalities, Applications)
READ: IA, Sec 3.4
- 16 **Graphs and Functions** (Definition, Domain and Range, The Rule Definition of a Function, Linear and Constant Functions, Vertical Line Test)
READ: IA, Sec 3.5
- 17 **QUIZ 3**
- 18 **Integral Exponents** (Positive and Negative Exponents, Product Rule, Zero Exponent, Changing the Sign of an Exponent, Quotient Rule)
READ: IA, Sec 5.1
- 19 **The Power Rules** (Raising an Exponential to a Power, Raising a Product to a Power, Raising a Quotient to a Power, Variable Exponents, Applications)
READ: IA, Sec 5.2
- 20 **Addition, Subtraction, and Multiplication of Polynomials** (Polynomials, Evaluating Polynomials, Addition, Subtraction and Multiplication of Polynomials)
READ: IA, Sec 5.3
- 21 **Multiplying Binomials** (The FOIL Method, The Square of a Binomial, Product of a Sum and a Difference)
READ: IA, Sec 5.4
- 22 **Division of Polynomials** (Dividing by a Monomial, Dividing by a Binomial, Synthetic Division, Division and Factoring)
READ: Handout
- 23 **QUIZ 4**

24 **Factoring Polynomials** (Factoring Out the Greatest Common Factor (GCF), Factoring Out the Opposite of the GCF, Factoring the Difference of Two Squares, Factoring Perfect Square Trinomials, Factoring a Difference or Sum of Two Cubes, Factoring a Polynomial Completely)

READ: IA, Sec 5.5

25 **Factoring Quadratics** (Factoring Trinomials with Lead Coefficient 1, Factoring Trinomials with Lead Coefficient not 1, Trial and Error, Factoring by Substitution, Higher Degree and Variable Exponents)

READ: IA, Sec 5.6

26 **Factoring Strategy** (Prime Polynomials, Factoring Polynomials Completely)

READ: IA, Sec 5.7

27 **Solving Equations by Factoring** (The Zero Factor Property, Applications)

READ: IA, Sec 5.8

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QUIZ 5

29 **Radicals**

READ: IA, Sec 7.1

30 **Rational Exponents** (Roots, Positive Rational Exponents, Negative Rational Exponents, Using the Rules of Exponents, Simplifying Expressions Involving Variables)

READ: IA, Sec 7.2

31 **Operations with Radicals/Quotients, Powers, and Rationalizing Denominators**

READ: IA, Sec 7.3/7.4

32 **Solving Equations with Radicals and Exponents**

READ: IA, Sec 7.5

33 **Complex Numbers (Definition, Addition, Subtraction, Multiplication, Division, Square Roots of Negative Numbers, Imaginary Solutions to Equations.**

READ: IA, Sec 7.6

34 **QUIZ 6**

35 **Factoring and Completing the Square** (Review of Factoring, Review of the Even Root Property, Completing the Square, Miscellaneous Equations, Imaginary Solutions)

READ: IA, Sec 8.1

- 36 **Quadratic Formula** (Developing the Formula, Using the Formula, Number of Solutions, Applications)
 READ: IA, Sec 8.2
- 37 **Graphs of Functions and Relations** (Linear and Constant Functions, Absolute Value Function, Quadratic Functions, Square Root Functions, Graphing Relations)
 READ: IA, Sec 9.1
- 38 **Transformation of Graphs** (Reflecting, Translating, Stretching and Shrinking, Multiple Transformations)
 READ: IA: Sec 9.2
- 39 **Exponential Functions** (Definition, Domain, Graphing Exponential Functions, Exponential Equations, Applications)
 READ: IA, Sec 10.1
- 40 **Logarithmic Functions** (Definition, Domain and Range, Graphing Logarithmic Functions, Logarithmic Equations, Applications)
 READ: IA, Sec 10.2
- 41 **Properties of Logarithms** (Product Rule, Quotient Rule, Power Rule, Inverse Properties, Using the Properties)
 READ: IA, Sec 10.3
- 42 **QUIZ 7**
- 43 **Series** (Summation Notation, Series, Changing the Index)
 READ: IA, Sec 12.2
- 44 **Angles and Arc Length**
 READ: Trig, Chap 30
- 45 **Trigonometric Functions of a General Angle**
 READ: Trig. Chap 31
- 46 **Trigonometric Functions of an Acute Angle**
 READ: Trig. Chap 32
- 47 **Variation and Graphs of the Trigonometric Functions**
 READ: Trig. Chap 36
- 48 **Variation and Graphs of the Trigonometric Functions**
 READ: Trig. Chap 36
- 49 **Fundamental Relations and Identities**
 READ: Trig. Chap 37
- 50 **Fundamental Relations and Identities**
 READ: Trig. Chap 37
- 51 **Sum Difference and Product Formulas**
 READ: Trig. Chap 39
- 52 **QUIZ 8**