

LEARNING LAB

MATHEMATICS, BUSINESS, & COMPUTER SCIENCE

RESOURCE MANUAL

2008 - 2009



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Mathematics Resource Manual

Business Resource Manual

Computer Science Resource Manual

LEARNING LAB

MATHEMATICS

RESOURCE MANUAL

2008 - 2009



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Basic Math

Basic College Mathematics, 2nd ed. (Martin-Gay, K. Elayn 2003)
CD-ROM 510 B292

Basic College Mathematics (Martin-Gay)

VC 510 B292C 2003

- *Tips for Success
- *Place Value and Names for Numbers
- *Adding Whole Numbers
- *Subtracting Whole Numbers
- *Rounding and Estimating
- *Multiplying Whole Numbers
- *Dividing Whole Numbers
- *An Introduction to Problem Solving
- *Exponents and Order of Operations
- *Introduction to Fractions and Mixed Numbers
- *Factors and Prime Factorization
- *Simplest Form of A Fraction
- *Multiplying Fractions
- *Dividing Fractions
- *Adding and Subtracting Like Fractions
- *Adding and Subtracting Mixed Numbers
- *Order, Exponents and the Order of Operations
- *Fractions and Problem Solving
- *Introduction to Decimals
- *Order and Rounding
- *Adding and Subtracting Decimals
- *Multiplying Decimals
- *Dividing Decimals
- *Estimating and Order of Operations
- *Fractions and Decimals
- *Ratios
- *Rates
- *Proportions
- *proportions and Problem Solving
- *Introduction to Percent
- *Percent and Fractions
- *Solving Percent Problems Using Equations
- *Solving Percent Problems Using Proportions
- *Applications of Percent
- *Percent and Problem Solving: Sales, Tax, Commission and Discount
- *Percent and Problem Solving: Interest
- *Length: U.S. and Metric Systems of Measurement
- *Weight and Mass: U.S. and Metric Systems of Measurement
- *Temperature: U.S. and Metric Systems of Measurement

- *Energy: U.S. and Metric Systems of Measurement
- *Lines and Angles
- *Plane Figures and Solids
- *Perimeter
- *Area
- *Volume
- *Square Roots and the Pythagorean Theorem
- *Congruent and Similar Triangles
- *Reading Pictographs, Bar Graphs
- *Reading Histograms
- *Mean, Median, and Mode
- *Counting and Introduction to Probability
- *Signed Numbers
- *Adding Signed Numbers
- *Subtracting Signed Numbers
- *Multiplying and Dividing Signed Numbers
- *Order of Operations
- *Solving Equations: The Addition Property
- *Solving Equations: The Multiplication Property
- *Solving Equations: Using Addition and Multiplication Properties
- *Equations and Problem Solving

Basic Decimals

VC 513.55 B292

- *Adding/Subtracting/Multiplying/Dividing Decimals
- *Decimal Word Problems
- *Decimal Word Problems with Proportions

Basic Fractions

VC 513.26 B292

- *What is a Fraction?
- *Finding a Common Denominator
- *Changing a Mixed Number to an Improper Fraction
- *Changing an Improper Fraction to a Mixed Number
- *Adding Fractions Having the Same Denominator
- *Subtracting Fractions Having the Same Denominator
- *Adding Fraction with Different Denominators
- *Subtracting Fractions Having Different Denominators
- *Adding/Subtracting Fractions
- *Multiplying/Dividing Fractions

Basic Geometry

VC 516 B292

- *Identifying Geometric Figures
- *Finding the Perimeter of a Geometric Figure
- *Identifying the Center, Radius
- *Diameter of a Circle
- *Understanding Concepts of Right/Acute/Obtuse/Straight Angles

- *Identifying Parallel & Perpendicular Lines
- *Find the Areas of Geometric Figures
- *Understanding the Complementary/Supplementary Angles
- *Finding Volume of Cylinder, Cone, Pyramid, or Rectangular Solid
- *Finding Perimeter & Computing Area of a Specified Region
- *Identifying Similar (Congruent) Figures
- *Identifying Points on a Coordinate Plane

Basic Number Concepts

VC 513 B292n

- *Comparing Equivalent Fractions
- *Changing Decimals to Fractions
- *Changing Fractions to Decimals
- *Rounding Decimals
- *Comparing Integers Using $<$ or $>$ signs
- *Applying Concepts of Exponents
- *Identifying Prime and Composite Numbers
- *Prime Factors of a Whole Number
- *Identifying the Greatest Common Factor
- *Finding the Least Common Denominator

Basic Percents

VC 513.24 b292

- *What is a Percent?
- *Converting Percents to Decimals/Decimals to Percent
- *Converting Fractions to Percent/Percent to Fractions
- *Finding a Percent of a Number
- *Finding the Percent One Number is of Another Number
- *Finding the Total Number When a Percent of it is Known
- *Mixed Percent Problems
- *Word Problems Dealing with Percents

Basic Pre-Algebra

VC 513.12 B292

- *Addition of Signed Numbers
- *Subtraction of Signed Numbers
- *Multiplication of Signed Numbers
- *Division of Signed Numbers
- *Combining Like Terms
- *Simple Equations
- *Solving Equations by Using 2 or More Operations
- *Combining Like Terms to Solve Equations
- *Graphing Solution Sets/Numbers Lines
- *Review of Signed Numbers
- *Evaluation Algebraic Expressions
- *Adding Monomials
- *Subtracting Monomials
- *Dividing Monomials

*Adding and Subtracting Polynomials

Basic Word Problems 1988

VC 513 B292W

*Word Problems Utilizing the Basic Operations

Basic College Mathematics an Applied Approach 5th ed.

VC 510 B292a 1995 (Pt. 1 – 19)

*Whole Numbers

*Fractions

*Decimals

*Decimals/Word Problems

*Ration & Proportions

*Percents

*Statistics

*Application to Business & Consumer

*U.S. Customary Units of Measurement

*The Metric Systems of Measurement

*Rational Numbers

*Introduction to Algebra

*Geometry

Decimals

VC 513.55 D356

*Introduction to Decimals Number System

*Decimals Represented as Points on a Number Line

*Addition and Subtraction of Decimal Numbers

*Multiplication of Decimal Numbers

*Division of Decimal Numbers

*Categories of Decimal Numbers

*Convert Fraction to Decimal Form

*Convert Decimal to Fraction Form

*Ratio & Proportion

*Using Calculators

*Ratios

*Proportions-Means & Extremes

Decimals, Real Life Math Series

VC 513.55 D356 (Pt.1 – 3)

*Pt. 1 - Introduction to decimals and operations, with word problems

*Pt. 2 - Decimals and fractions, conversions, ratios and proportions, with word problems

*Pt. 3 - Decimals in our daily life, calculator, and checkbook skills

Fractions: A Comprehensive Review, Back to Back Math Series 1990

VC 513.26 F841c

*Understanding the Meaning of Fractions

*Factoring Whole Numbers

*Prime and Composite Numbers

- *Prime Factorizations
- *Finding the Greatest Common Factor
- *Raising Fractions to Higher Terms
- *Reducing Fractions to Lowest Terms
- *Express Whole or Mixed Numbers as Improper Fractions
- *Finding the Least Common Multiple
- *Finding the Least Common Denominator
- *Comparing Fractions
- *Add Like Fractions & Mixed Numbers with Like Fractions
- *Add Unlike Fractions & Mixed Numbers with Unlike Fractions
- *Subtract Like Fractions & Mixed Numbers with Like Fractions
- *Subtract Unlike Fraction & Mixed Numbers with Unlike Fractions
- *Multiplying Whole Numbers and Fractions
- *Multiplying Whole Numbers and Mixed Fractions
- *Multiplying Fractions
- *Multiplying Fractions and Mixed Numbers
- *Divide Whole Numbers by Fractions & Mixed Numbers
- *Divide Fractions & Mixed Numbers by Fractions
- *Divide Fractions and Mixed Numbers by Whole Numbers
- *Divide Mixed Numbers by Mixed Numbers

Fractions, Real Life Math Series

VC 513.26 F841 (Pt. 1 – 4)

- *Pt 1 - Introduction to fractions, definitions, and illustrations
- *Pt 2 - Equivalent fractions, comparing fractions with word problems
- *Pt 3 - Addition and subtraction of fractions, with word problems
- *Pt 4 - Multiplication and division of fractions with word problems

Algebra

Introductory Algebra

Introductory Algebra 2nd ed 2003

VC 512.9 IN8IA 2003

- *Tips for Success in Mathematics
- *Symbols and Sets of Numbers
- *Introduction to Variable Expressions and Equations
- *Adding Real Numbers
- *Subtracting Real Numbers
- *Multiplying Real Numbers
- *Dividing Real Numbers
- *Properties of Real Numbers
- *Reading Graphs
- *Simplifying Expressions
- *The Addition Property of Equality

- *The Multiplication Property of Equality
- *Further Solving Linear Equations
- *An Introduction to Problem Solving
- *Formula and Problem solving
- *Percent, Ratio, and Proportion
- *Solving Linear Inequalities
- *Exponents
- *Negative Exponents and Scientific Notation
- *Introduction to Polynomials
- *Adding and Subtracting Polynomials
- *Multiplying Polynomials
- *Special Products
- *Dividing Polynomials
- *The Greatest Common Factor
- *Factoring Trinomials of the Form X^2+BX+C
- *Factoring Trinomials of the Form AX^2+BX+C
- *Factoring Trinomials of the Form AX^2+BX+C by Grouping
- *Factoring Perfect Square Trinomials and the Difference of Two Squares
- *Solving Quadratic Equations by Factoring
- *Quadratic Equations and Problem Solving
- *Simplifying Rational Expressions
- *Multiplying and Dividing Rational Expressions
- *Adding and Subtracting Rational Expressions with the Same Denominator and Least Common Denominator
- *Adding and Subtracting Rational Expressions with Different Denominators
- *Solving Equations Containing Rational Expressions
- *Rational Equations and Problem Solving
- *Simplifying Complex Fractions
- *The Rectangular Coordinate System
- *Graphing Linear Equations
- *Intercepts
- *Slope
- *Equations of Lines
- *Introduction to Functions
- *Graphing Linear Inequalities in Two Variables
- *Solving Systems of Linear Equations by Graphing
- *Solving Systems of Linear Equations by Substitution
- *Solving Systems of Linear Equations by Addition
- *Systems of Linear Equations and Problem Solving
- *Introduction to Radicals
- *Simplifying Radicals
- *Adding and Subtracting Radicals
- *Multiplying and Dividing Radicals
- *Solving Equations Containing Radicals
- *Radical Equations and Problem Solving
- *Solving Quadratic Equations by the Square Root Property
- *Solving Quadratic Equations by Completing the Square
- *Solving Quadratic Equations by the Quadratic Formula

- *Graphing Quadratic Equations in Two Variables
- *Factors and the Least Common Multiple
- *Decimals and Percents

Introductory Algebra, 3rd ed. CD Lecture Series with author Elayn Martin-Gay, 2007
 CD-ROM 512.9 IN8i pt. 1-5

- *Pt. 1 Chapter R – Pre-algebra review
 - ~R.1 *Factors and the Least Common Multiple*
 - ~R.2 *Fractions*
 - ~R.3 *Decimals and Percents*
- Chapter 1 – Real numbers & introduction to algebra
 - ~1.1 *Tips for Success in Mathematics*
 - ~1.2 *Symbols and Sets of Numbers*
 - ~1.3 *Exponents, Order of Operations, & Variable Expressions*
 - ~1.4 *Adding Real Numbers*
 - ~1.5 *Subtracting Real Numbers*
 - ~1.6 *Multiplying and Dividing Real Numbers*
 - ~1.7 *Properties of Real Numbers*
 - ~1.8 *Simplifying Expressions*
- *Pt. 2 Chapter 2 – Equations, inequalities, & problem solving
 - ~2.1 *The Addition Property of Equality*
 - ~2.2 *The Multiplication Property of Equality*
 - ~2.3 *Further Solving Linear Equations*
 - ~2.4 *An Introduction to Problem Solving*
 - ~2.5 *Formulas and Problem Solving*
 - ~2.6 *Percent and Mixture*
 - ~2.7 *Solving Linear Inequalities*
- Chapter 3 – Exponents and polynomials
 - ~3.1 *Exponents*
 - ~3.2 *Negative Exponents and Scientific Notation*
 - ~3.3 *Introduction to Polynomials*
 - ~3.4 *Adding and Subtracting Polynomials*
 - ~3.5 *Multiplying Polynomials*
 - ~3.6 *Special Products*
 - ~3.7 *Dividing Polynomials*
- *Pt. 3 Chapter 4 – Factoring polynomials
 - ~4.1 *The Greatest Common Factor*
 - ~4.2 *Factoring Trinomials of the Form $x^2 + bx + c$*
 - ~4.3 *Factoring Trinomials of the Form $ax^2 + bx + c$*
 - ~4.4 *Factoring Trinomials of the Form $ax^2 + bx + c$ by Grouping*
 - ~4.5 *Factoring Perfect Square Trinomials and the Difference of Two Squares*
 - ~4.6 *Solving Quadratic Equations by Factoring*
 - ~4.7 *Quadratic Equations and Problem Solving*
- Chapter 5 – Rational expressions
 - ~ 5.1 *Simplifying Rational Expressions*
 - ~ 5.2 *Multiplying and Dividing Rational Expressions*
 - ~ 5.3 *Adding and Subtracting Rational Expressions with the Same Denominator*

- ~ 5.4 Adding and Subtracting Rational Expressions with Different Denominators
- ~ 5.5 Solving Equations Containing Rational Expressions
- ~ 5.6 Proportion and Problem Solving with Rational Expressions
- ~ 5.7 Simplifying Complex Fractions
- *Pt. 4 Chapter 6 – Graphing equations & inequalities
 - ~6.1 Reading Graphs and The Rectangular Coordinate System
 - ~6.2 Graphing Linear Equations
 - ~6.3 Intercepts
 - ~6.4 Slope and Rate of Change
 - ~6.5 Equations of Lines
 - ~6.6 Introduction to Functions
 - ~6.7 Graphing Linear Inequalities in Two Variables
 - ~6.8 Direct and Inverse Variation
- Chapter 7 – Systems of equations
 - ~7.1 Solving Systems of Linear Equations by Graphing
 - ~7.2 Solving Systems of Linear Equations by Substitution
 - ~7.3 Solving Systems of Linear Equations by Addition
 - ~7.4 Systems of Linear Equations and Problem Solving
- *Pt. 5 Chapter 8 – Roots and radicals
 - ~8.1 Introduction to Radicals
 - ~8.2 Simplifying Radicals
 - ~8.3 Adding and Subtracting Radicals
 - ~8.4 Multiplying and Dividing Radicals
 - ~8.5 Solving Equations Containing Radicals
 - ~8.6 Radical Equations and Problem Solving
- Chapter 9 - Quadratic equations
 - ~9.1 Solving Quadratic Equations by the Square Root Property
 - ~9.2 Solving Quadratic Equations by Completing the Square
 - ~9.3 Solving Quadratic Equations by the Quadratic Formula
 - ~9.4 Graphing Quadratic Equations in Two Variables

Intermediate Algebra

Intermediate Algebra

VC 512.9 IN8A 2003

- *Tips for Success in Mathematics
- *Sets of Numbers
- *Properties of Real Numbers
- *Operations of Real Numbers
- *Order of Operations and Algebraic Expressions
- *Exponents and Scientific Notation
- *More Work with Exponents and Scientific Notion
- *Linear Inequalities and Problem Solving
- *Sets and Compound Inequalities
- *Absolute Value Equations and Inequalities
- *Graphing Linear Inequalities
- *Solving Systems of Linear Equations in Two Variables

- *Solving Systems of Linear Equations and Problem Solving
- *Solving Systems of Equations Using Matrices
- *Systems of Linear Inequalities
- *Adding and Subtracting Polynomials
- *Multiplying Polynomials
- *Dividing Polynomials
- *The Greatest Common Factor and Factoring by Grouping
- *Factoring Trinomials
- *Factoring Special Products
- *Solving Equations by Factoring and Solving Problems
- *An Introduction to Graphing Polynomial Functions
- *Multiplying and Dividing Rational Expressions
- *Adding and Subtracting Rational Expressions
- *Simplifying Complex Fractions
- *Solving Equations Containing Rational Expressions
- *Rational Expressions and Problem Solving
- *Variations and Problem Solving
- *Radical Expressions
- *Rational Exponents
- *Simplifying Radical Expressions
- *Adding, Subtracting, and Multiplying Radical Expressions
- *Rationalizing Numerators and Denominators of Radical Expressions
- *Radical Equations and Problem Solving
- *Complex Numbers
- *Solving Quadratic Equations by Completing the Square
- *Solving Quadratic Equations by Using the Quadratic Formula
- *Solving Equations by Using Quadratic Methods
- *Nonlinear Inequalities in One Variable
- *Quadratic Functions and Their Graphs
- *Further Graphing of Quadratic Functions
- *The Parabola and the Circle
- *The Ellipse and the Hyperbola
- *Graphing Nonlinear Functions
- *Solving Nonlinear Systems of Equations
- *Nonlinear Inequalities and Systems of Inequalities
- *The Algebra of Functions
- *Inverse Function
- *Exponential Functions
- *Logarithmic Functions
- *Properties of Logarithms
- *Common Logarithms, Natural Logarithms and Changes of Base
- *Exponential and Logarithmic Equations and Problem Solving

Intermediate Algebra (Aufmann/Barker/Lockwood 5th ed) 2000

VC 512 IN8 2000 (Pt. 1 – 21)

- *Review of Real Numbers
- *First Degree Equations and Inequalities

- *Linear Functions and Inequalities in Two Variables
- *Systems of Equations and Inequalities
- *Polynomials and Exponents
- *Rational Expressions
- *Rational Exponents and Radicals
- *Quadratic Equations and Inequalities
- *Functions and Relations
- *Exponential & Logarithmic Functions
- *Sequence and Series
- *Conic Sections

College Algebra

Algebra I Video Tutor Instructional Series

VC 512 AL33 (Vol. 1 – 6)

- *Combining Like Terms
- *Simple Equations
- *Solving Equations by Using Two or More Operations
- *Combining Like Terms to Solve Equations
- *Graphing Solution Sets/Number Lines
- *Signed Numbers
- *Evaluating Algebraic Expressions
- *Adding Monomials
- *Subtracting Monomials
- *Multiplying Monomials
- *Dividing Monomials
- *Adding Polynomials & Subtracting Polynomials
- *Dividing Polynomials by a Binomial (Polynomial)
- *Equations Containing Parentheses
- *Absolute Value Equations
- *Solving Equations Containing More than One Variable
- *Inequalities Containing One Variable
- *Factoring Polynomials Whose Terms have a Common Factor
- *Squaring a Monomial
- *Multiplying the Sum & Difference of Two Numbers
- *Factoring the Difference of Two Squares
- *Finding the Product of Two Binomials
- *Factoring Trinomials
- *Factoring Completely
- *Reducing Fractions
- *Multiplying Fractions
- *Dividing Fractions
- *Adding Fractions Having the Same Denominator
- *Subtracting Fraction having the Same Denominator
- *Adding Fractions Having Different Denominators
- *Subtracting Fractions Having Different Denominators
- *Mixed Expressions

- *Solving Equations Containing Fractions
- *Solving Decimal Equations
- *Solving Inequalities Containing Fractional & Decimal Coefficients
- *Solving for X when Many Variables re Involved
- *Graphing/Plotting Points
- *Graphing Solution Sets/Graphing Equations
- *Graphing Lines Parallel to the X or Y Axis
- *Slope
- *Slope & Y-Intercept of an Equation
- *Finding Equation when Slope & a Point are Given
- *Finding Equation when Two Points are Given
- *The Equation of a Line $Y=mx + b$
- *Absolute Value Graphing
- *Inequality Graphing
- *Solving Equations Simultaneously
- *Solving Equations by Substitution
- *Graphing Solution Sets of Systems of Inequalities
- *Repeating Decimals
- *Square Roots
- *Radicals-Simplifying in Radical Form
- *Radicals-Decimal Form
- *Radical-Square Root of Monomials
- *Simplifying a Radical Whose Radicand is a Fraction
- *Adding/Subtracting Radicals
- *Multiplying Radicals
- *Dividing Radicals
- *Rationalizing an Irrational Radical Denominator
- *Solving Radical Equations
- *Factoring & Solving Quadratic Equations
- *Solving Incomplete Quadratic Equations
- *Solving Quadratic Equations by Using the Quadratic Formula

College Algebra (Beecher/Penna/Bittinger, 2nd ed.)

VC 512.9 C686ca 2005 (Pt. 1 – 11)

- *Basic Concepts of Algebra
- *Graphs, Function, and Models
- *Functions, Equations, and Inequalities
- *Polynomial and Rational Functions
- *Exponential and Logarithmic Functions
- *Systems of Equations and Matrices
- *Conic Sections
- *Sequences, Series, and Combinatorics

College Algebra (Brooks/Cole, 7th ed. 2001)

VC 512.9 C686G 2001 (Pt. 1 – 11)

- *Basic Concepts
- *Equations & Inequalities

- *The Rectangular Coordinate System and Graphs of Equations
- *Functions
- *Exponential and Logarithmic Functions
- *Solving Polynomial Equations
- *Systems of Linear Equations
- *Conic Sections & Quadratic Systems
- *Natural Number Functions and Probability
- *The Mathematics of Finance

Video lectures on CD: to accompany College Algebra, 3rd ed. (Beecher/Bittinger/Penna)

CD-ROM 512.9 V668ca pt. 1-9

- *Pt. 1 Chapter R – Basic Concepts of Algebra
 - R.1 The Real-Number System*
 - R.2 Integer Exponents, Scientific Notation, & Order of Operations*
 - R.3 Addition, Subtraction, and Multiplication of Polynomials*
 - R.4 Factoring*
 - R.5 Rational Expressions*
 - R.6 Radical Notation and Rational Exponents*
 - R.7 The Basics of Equation Solving*
- *Pt. 2 Chapter 1 – Graphs, Functions, and Models
 - 1.1 Introduction to Graphing*
 - 1.2 Functions and Graphs*
 - 1.3 Linear Functions, Slope, and Applications*
 - 1.4 Equations of Lines and Modeling*
 - 1.5 More on Functions*
 - 1.6 The Algebra of Functions*
 - 1.7 Symmetry and Transformations*
- *Pt. 3 Chapter 2 – Functions, Equations, and Inequalities
 - 2.1 Linear Equations, Functions, and Models*
 - 2.2 The Complex Numbers*
 - 2.3 Quadratic Equations, Functions, and Models*
 - 2.4 Analyzing Graphs of Quadratic Functions*
 - 2.5 More Equation Solving*
 - 2.6 Solving Linear Inequalities*
- *Pt. 4 Chapter 3 – Polynomial and Rational Functions
 - 3.1 Polynomial Functions and Models*
 - 3.2 Graphing Polynomial Functions*
 - 3.3 Polynomial Division; The Remainder and Factor Theorems*
 - 3.4 Theorems about Zeros of Polynomial Functions*
 - 3.5 Rational Functions*
 - 3.6 Polynomial and Rational Inequalities*
 - 3.7 Variation and Applications*
- *Pt. 5 Chapter 4 – Exponential and Logarithmic Functions
 - 4.1 Inverse Functions*
 - 4.2 Exponential Functions and Graphs*
 - 4.3 Logarithmic Functions and Graphs*
 - 4.4 Properties of Logarithmic Functions*
 - 4.5 Solving Exponential and Logarithmic Equations*

- 4.6 Applications and Models: Growth and Decay; Compound Interest*
- *Pt. 6 Chapter 5 – Systems of Equations and Matrices
 - 5.1 Systems of Equations in Two Variables*
 - 5.2 Systems of Equations in Three Variables*
 - 5.3 Matrices and Systems of Equations*
 - 5.4 Matrix Operations*
 - 5.5 Inverses of Matrices*
 - 5.6 Determinants and Cramer's Rule*
 - 5.7 Systems of Inequalities and Linear Programming*
 - 5.8 Partial Fractions*
 - *Pt. 7 Chapter 6 – Conic Sections
 - 6.1 The Parabola*
 - 6.2 The Circle and the Ellipse*
 - 6.3 The Hyperbola*
 - 6.4 Nonlinear Systems of Equations and Inequalities*
 - *Pt. 8 Chapter 7 (7.1 – 7.4) - Sequences, Series, and Combinatorics
 - 7.1 Sequences and Series*
 - 7.2 Arithmetic Sequences and Series*
 - 7.3 Geometric Sequences and Series*
 - 7.4 Mathematical Induction*
 - *Pt. 9 Chapter 7 (7.5 – 7.8) - Sequences, Series, and Combinatorics
 - 7.5 Combinatorics: Permutations*
 - 7.6 Combinatorics: Combinations*
 - 7.7 The Binomial Theorem*
 - 7.8 Probability*

Pre-calculus & Calculus

Pre-calculus

Pre-calculus, Made Easy Series 1990

VC 512.1 P911 (Vol. 1 – 5)

- *The Number System
- *Inequalities & Intervals
- *Absolute Value
- *Exponents & Radicals
- *Graphs in the Coordinate
- *The Distance Formula
- *Graphs of Equations
- *Circles in the Plane
- *Introduction to Functions
- *Domain, Range, & Graphs of Functions
- *More Graphing Techniques
- *Linear Functions & Their Graphs
- *The Algebra of Functions & Inverses

- *Quadratic Functions
- *Polynomial Functions & Their Graphs
- *Graphing Rational Functions

Pre-calculus, Mathematics Instructional DVD Series (Larson/Hostetler, 2007)

For use with: Pre-calculus, 7th ed.

Pre-calculus with Limits

Pre-calculus: A Concise Course

DVD 515 L329 P pt. 1-11

- *Pt. 1 Chapter 1 – Functions and Their Graphs
 - ~1.1 *Rectangular Coordinates*
 - ~1.2 *Graphs of Equations*
 - ~1.3 *Linear Equations in Two Variables*
 - ~1.4 *Functions*
 - ~1.5 *Analyzing Graphs of Functions*
 - ~1.6 *A Library of Functions*
 - ~1.7 *Transformations of Functions*
 - ~1.8 *Combinations of Functions: Composite Functions*
- *Pt. 2 Chapter 1 – Functions and Their Graphs
 - ~1.9 *Inverse Functions*
 - ~1.10 *Mathematical Modeling and Variation*
 Chapter 2 – Polynomial and Rational Functions
 - ~2.1 *Quadratic Functions and Models*
 - ~2.2 *Polynomial Functions of Higher Degree*
 - ~2.3 *Polynomial and Synthetic Division*
 - ~2.4 *Complex Numbers*
 - ~2.5 *Zeros of Polynomial Functions*
- *Pt. 3 Chapter 2 – Polynomial and Rational Functions
 - ~2.6 *Rational Functions*
 - ~2.7 *Nonlinear Inequalities*
 Chapter 3 – Exponential and Logarithmic Functions
 - ~3.1 *Exponential Functions and Their Graphs*
 - ~3.2 *Logarithmic Functions and Their Graphs*
 - ~3.3 *Properties of Logarithms*
 - ~3.4 *Exponential and Logarithmic Equations*
 - ~3.5 *Exponential and Logarithmic Models*
- *Pt. 4 Chapter 4 – Trigonometry
 - ~4.1 *Radian and Degree Measure*
 - ~4.2 *Trigonometric Functions: The Unit Circle*
 - ~4.3 *Right Triangle Trigonometry*
 - ~4.4 *Trigonometric Functions of Any Angle*
 - ~4.5 *Graphs of Sine and Cosine Functions*
- *Pt. 5 Chapter 4 – Trigonometry
 - ~4.6 *Graphs of Other Trigonometric Functions*
 - ~4.7 *Inverse Trigonometric Functions*
 - ~4.8 *Applications and Models*
 Chapter 5 – Analytic Trigonometry
 - ~5.1 *Using Fundamental Identities*

- ~5.2 *Verifying Trigonometric Identities*
- *Pt. 6 Chapter 5 – Analytic Trigonometry
 - ~5.3 *Solving Trigonometric Equations*
 - ~5.4 *Sum and Difference Formulas*
 - ~5.5 *Multiple-Angle and Product-to-Sum Formulas*
 - ~5.6 *Law of Sines (Precalculus: A Concise Course)*
 - ~5.7 *Law of Cosines (Precalculus: A Concise Course)*
- Chapter 6 – Additional Topics in Trigonometry (Precalculus and Precalculus with Limits)
 - * Chapter 6 Precalculus: A Concise Course is located on discs 9 and 10 of the DVD set.
 - ~6.1 *Law of Sines (Precalculus and Precalculus with Limits)*
 - ~6.2 *Law of Cosines (Precalculus and Precalculus with Limits)*
 - ~6.3 *Vectors in the Plane (Precalculus and Precalculus with Limits)*
- *Pt. 7 Chapter 6 – Additional Topics in Trigonometry (Precalculus and Precalculus with Limits)
 - ~6.4 *Vectors and Dot Products*
 - ~6.5 *Trigonometric Form of a Complex Number*
- Chapter 7 - Systems of Equations and Inequalities (Precalculus and Precalculus with Limits)
 - ~7.1 *Linear and Nonlinear Systems of Equations*
 - ~7.2 *Two-Variable Linear Systems*
 - ~7.3 *Multivariable Linear Systems*
 - ~7.4 *Partial Fractions*
 - ~7.5 *Systems of Inequalities*
 - ~7.6 *Linear Programming*
- *Pt. 8 Chapter 8 – Matrices and Determinants (Precalculus and Precalculus with Limits)
 - ~8.1 *Matrices and Systems of Equations*
 - ~8.2 *Operations with Matrices*
 - ~8.3 *The Inverse of a Square Matrix*
 - ~8.4 *The Determinant of a Square Matrix*
 - ~8.5 *Applications of Matrices and Determinants*
- Chapter 9 – Sequences, Series, and Probability (Precalculus and Precalculus with Limits)
 - ~9.1 *Sequences and Series*
 - ~9.2 *Arithmetic Sequences and Partial Sums*
 - ~9.3 *Geometric Sequences and Series*
- *Pt. 9 Chapter 9 – Sequences, Series, and Probability (Precalculus and Precalculus with Limits)
 - ~9.4 *Mathematical Induction*
 - ~9.5 *The Binomial Theorem*
 - ~9.6 *Counting Principles*
 - ~9.7 *Probability*
- Chapter 10 – Topics in Analytic Geometry (Precalculus and Precalculus with Limits)
- Chapter 6 – Topics in Analytic Geometry (Precalculus: A Concise Course)

~10.1/6.1 Lines

~10.2/6.2 Introduction to Conics: Parabolas

~10.3/6.3 Ellipses

*Pt. 10 Chapter 10 – Topics in Analytic Geometry (Precalculus and Precalculus with Limits)

Chapter 6 – Topics in Analytic Geometry (Precalculus: A Concise Course)

~10.4/6.4 Hyperbolas

~10.5 Rotation of Conics (Precalculus and Precalculus with Limits)

~10.6/6.5 Parametric Equations

~10.7/6.6 Polar Coordinates

~10.8/6.7 Graphs of Polar Coordinates

~10.9/6.8 Polar Equations of Conics

Chapter 11 – Analytic Geometry in Three Dimensions (Precalculus with Limits)

~11.1 The Three- Dimensional Coordinate System

*Pt. 11 Chapter 11 – Analytic Geometry in Three Dimensions (Precalculus with Limits)

~11.2 Vectors in Space

~11.3 The Cross Products of Two Vectors

~11.4 Lines and Planes in Space

Chapter 12 – Limits and an Introduction to Calculus (Precalculus with Limits)

~12.1 Introduction to Limits

~12.2 Techniques for Evaluating Limits

~12.3 The Tangent Line Problem

~12.4 Limits at Infinity and Limits of Sequences

~12.5 The Area Problem

Calculus

Calculus

CD-ROM 515.15 In8 1998

*Interactive Calculus

Calculus 1: A Comprehensive Review 1989

VC 515 C126o

*Equations of Straight Lines

*Functions

*Limits

*Derivatives

*Graphing

*Applications

Calculus 2: A Comprehensive Review 1989

VC 515 C126t

*Simple integrals

*Applications

*Logarithmic & Exponential Functions

*Trigonometric Functions

- *Inverse Trigonometric Functions
- *Methods Integration

Calculus, 8th ed. Series, Instructional DVDs (Larson/Hostetler/Edwards, 2006)

DVD 515 C126ca pt. 1-12

- *Pt. 1 Chapter P – Preparation for Calculus
 - ~P.1 *Graphs and Models*
 - ~P.2 *Linear Models and Rates of Change*
 - ~P.3 *Functions and Their Graphs*
 - ~P.4 *Fitting Models to Data*
- Chapter 1 – Limits and Their Properties
 - ~1.1 *A Preview of Calculus*
 - ~1.2 *Finding Limits Graphically and Numerically*
- *Pt. 2 Chapter 1 – Limits and Their Properties
 - ~1.3 *Evaluating Limits Analytically*
 - ~1.4 *Continuity and One-Sided Limits*
 - ~1.5 *Infinite Limits*
- Chapter 2 – Differentiation
 - ~2.1 *The Derivative and the Tangent Line Problem*
 - ~2.2 *Basic Differentiation Rules and Rate of Change*
- *Pt. 3 Chapter 2 – Differentiation
 - ~2.3 *The Product and Quotient Rules and Higher-Order Derivatives*
 - ~2.4 *The Chain Rule*
 - ~2.5 *Implicit Differentiation*
 - ~2.6 *Related Rates*
- Chapter 3 – Applications of Differentiation
 - ~3.1 *Extrema on an Interval*
 - ~3.2 *Rolle's Theorem and the Mean Value Theorem*
 - ~3.3 *Increasing and Decreasing Functions and the First Derivative Test*
- *Pt. 4 Chapter 3 – Applications of Differentiation
 - ~3.4 *Concavity and the Second Derivative Test*
 - ~3.5 *Limits at Infinity*
 - ~3.6 *A Summary of Curve Sketching*
 - ~3.7 *Optimization Problems*
 - ~3.8 *Newton's Method*
 - ~3.9 *Differentials*
- *Pt. 5 Chapter 4 – Integration
 - ~4.1 *Antiderivatives and Indefinite Integration*
 - ~4.2 *Area*
 - ~4.3 *Riemann Sums and Definite Integrals*
 - ~4.4 *The Fundamental Theorem of Calculus*
- *Pt. 6 Chapter 4 – Integration
 - ~4.5 *Integration by Substitution*
 - ~4.6 *Numerical Integration*
- Chapter 5 – Logarithmic, Exponential, and Other Transcendental Functions
 - ~5.1 *The Natural Logarithmic Function: Differentiation*
 - ~5.2 *The Natural Logarithmic Function: Integration*
 - ~5.3 *Inverse Functions*

- ~5.4 *Exponential Functions: Differentiation and Integration*
- *Pt. 7 Chapter 5 – Logarithmic, Exponential, and Other Transcendental Functions
 - ~5.5 *Bases Other Than e and Applications*
 - ~5.6 *Inverse Trigonometric Functions: Differentiation*
 - ~5.7 *Inverse Trigonometric Functions: Integration*
 - ~5.8 *Hyperbolic Functions*
- Chapter 6 – Differential Equations
 - ~6.1 *Slope Fields and Euler's Method*
 - ~6.2 *Differential Equations: Growth and Decay*
- *Pt. 8 Chapter 6 – Differential Equations
 - ~6.3 *Separation of Variables and the Logistic Equation*
 - ~6.4 *First-Order Linear Differentiation Equations*
- Chapter 7 – Applications of Integration
 - ~7.1 *Area of a Region Between Two Curves*
 - ~7.2 *Volume: The Disk Method*
 - ~7.3 *Volume: The Shell Method*
 - ~7.4 *Arc Length and Surfaces of Revolution*
- Chapter 8 – Integration Techniques, L'Hopital's Rule, and Improper Integrals
 - ~8.2 *Integration by Parts*
 - ~8.4 *Trigonometric Substitution*
- *Pt. 9 Chapter 8 – Integration Techniques, L'Hopital's Rule, and Improper Integrals
 - ~8.5 *Partial Fractions*
 - ~8.7 *Indeterminate Forms and L'Hopital's Rule*
 - ~8.8 *Improper Integrals*
- Chapter 9 – Infinite Series
 - ~9.6 *The Ratio and Root Tests*
 - ~9.8 *Power Series*
 - ~9.9 *Representation of Functions by Power Series*
 - ~9.10 *Taylor and Maclaurin Series*
- *Pt. 10 Chapter 10 – Conics, Parametric Equations, and Polar Coordinates
 - ~10.2 *Plane Curves and Parametric Equations*
 - ~10.3 *Parametric Equations and Calculus*
 - ~10.5 *Area and Arc Length in Polar Coordinates*
- Chapter 11 – Vectors and the Geometry of Space
 - ~11.2 *Space Coordinates and Vectors in Space*
 - ~11.3 *The Dot Product of Two Vectors*
 - ~11.4 *The Cross Product of Two Vectors in Space*
- *Pt. 11 Chapter 11 – Vectors and the Geometry of Space
 - ~11.5 *Lines and Planes in Space*
- Chapter 12 – Vector-Valued Functions
 - ~12.2 *Differentiation and Integration of Vector-Valued Functions*
 - ~12.4 *Tangent Vectors and Normal Vectors*
- Chapter 13 – Functions of Several Variables
 - ~13.3 *Partial Derivatives*
 - ~13.7 *Tangent Planes and Normal Lines*
- Chapter 14 – Multiple Integration
 - ~14.2 *Double Integrals and Volume*

- *Pt. 12 Chapter 14 – Multiple Integration
 - ~14.7 *Triple Integrals in Cylindrical and Spherical Coordinates*
- Chapter 15 – Vector Analysis
 - ~15.2 *Line Integrals*
 - ~15.4 *Green's Theorem*
 - ~15.8 *Stoke's Theorem*

Topics in Calculus

VC 515.15 T624 (Pt. 1 – 2)

Video Tutorial Service Presents Calculus, Math Made Easy Series 1991

VC 515 V668 (Pt. 1 – 13)

- *Limits & Their Properties
- *Differentiation
- *Applications of Differentiation
- *Integrations
- *Transcendental Functions
- *Applications of Integration
- *Integration Techniques
- *More Integration Techniques, L'Hospital's Rule

Linear Programming, Pure Mathematics, Statistics, & Trigonometry

Linear Programming

Linear Programming

Academic Press, 1993

Alan Sultan

519.72 Su59L

Summary: Linear Programming is aimed at undergraduate students who are interested in some of the current applications of mathematics to the real world. This text and programming disk are written without a linear algebra prerequisite, and are still mathematically honest. The approach taken is pedagogically a very simple one, using the compact tableau. It is self-contained and so simple that the only prerequisite is knowledge of high school algebra.

*Pure Mathematics***Introduction to Pure Mathematics Series:****Calculating PI**

VC 515.15 C126

Series & E

VC 515.15 Se67

Application of Conic Sections

VC 516.15 Ap58

*Statistics***Against All Odds: Inside Statistics**

VC 519.5 AG14 (Pt. 1- 13)

- *Pt.1 - What is statistics? Picturing distributions
- *Pt.2 - Describing distributions. Normal distributions
- *Pt.3 - Normal calculations. Time series
- *Pt.4 - Models for growth. Describing relationships
- *Pt.5 - Correlation. Multidimensional data analysis
- *Pt.6 - The question of causation. Experimental design
- *Pt.7 - Blocking and sampling. Samples and surveys
- *Pt.8 - What is probability? Random variables
- *Pt.9 - Binomial distributions. The sample mean and control charts
- *Pt.10 - Confidence intervals. Significance tests
- *Pt.11 - Inference for one mean. Comparing two mean
- *Pt.12 - Inference for proportions. Inference for two-way tables
- *Pt.13 - Inference for relationships. Case study

*Trigonometry***Trigonometry**

VC 516.24 T734

- *The Six Trig Functions
- *Right Triangle Trig
- *Radian Measure
- *Graphing & Inverse Functions
- *Identities & Formulas
- *Equations
- *Triangles
- *Complex Numbers & Polar Coordinate
- *Logarithms

Trigonometry: A Comprehensive Review (1991)

VC 516.24 T734

- *Trigonometry of the Right Triangle
- *Trig Functions of Angles of any Size: General Angle
- *Trig Graphs
- *Generalized Trigonometric Relationships
- *Trigonometric Equations

Astronomy & Physics

Cosmos 1989

VC 520 C821 (Pt. 1 – 13)

- *The Shores of the Cosmic Ocean
- *One Voice in the Cosmic Fugue
- *The Harmony of the World
- *Heaven & Hell
- *Blues for a Red Planet
- *Travelers' Tales the Backbone of Night
- *Travel in Space & Time
- *The Lives of the Stars
- *The Edge of Forever
- *The Persistence of Memory
- *Encyclopedia Galactic
- *Who Speak for Earth

The Mechanical Universe

VC 531 M464 (Pt. 1 – 52)

- *Introduction to the Mechanical Universe
- *The Law of Falling Bodies
- *Derivatives
- *Inertia
- *Vectors
- *Newton's Laws
- *Integration
- *The Apple & the Moon
- *Moving in Circles
- *Fundamental Forces
- *Gravity, Electricity, Magnetism
- *The Millikan Experiment
- *Conservation of Energy
- *Potential Energy
- *Conservation of Momentum
- *Harmonic Motion
- *Resonance
- *Waves
- *Angular Momentum
- *Torgues & Gyroscopes

- *Kepler's Three Laws
- *The Kepler Problem
- *Energy & Eccentricity
- *Navigating in Space
- *From Kepler to Einstein
- *Harmony of the Sphere
- *Beyond the Mechanical Universe
- *Static Electricity
- *The Electric Field
- *Potential & Capacitance
- *Voltage, Energy, & Force
- *The Electric Battery
- *Electric Circuits
- *Magnets
- *Magnetic Fields
- *vector Fields & Hydrodynamics
- *Electromagnetic Induction
- *Alternating Current
- *Maxwell's Equations
- *Optics
- *Michelson-Morley Experiment
- *The Lorentz Transformation
- *Velocity & Time
- *MSS, Momentum, Energy
- *Temperature & Gas
- *Engine of Nature
- *Entropy
- *Low Temperatures
- *the Atom
- *Particles & Waves
- *From Atoms to Quarks
- *Quantum Mechanical Universe

The Science of Energy

VC 530 Sci27

Study, Teaching, & Career Development

Donald in Mathmagic Land (1959)

VC 510 D714

GED - Mathematics

VC 373.1262 G286 (Pt. 28 – 42)

- *GED Math 1-Chapter 1 Let's be Rational about Fractions
- *GED Math 2-Chapter 2 Fractions for the Forgetful

- *GED Math 3-Chapter 3 Unmixed Mixed Numbers
- *GED Math 4-Chapter 4 Show and Tell
- *GED Math 5-Chapter 5 Operating Room
- *GED Math 6-Chapter 6 Make it Easy on Yourself
- *GED Math 7-Chapter 7 The Point of Decimals
- *GED Math 8-Chapter 8 Keeping Things in Proportion
- *GED Math 9-Chapter 9 Playing the Percentages
- *GED Math 10-Chapter 10 The Percentage Revolution
- *GED Math 11-Chapter 11 Being Positive about Signed Numbers
- *GED Math 12-Chapter 12 Algebra on the Run
- *GED Math 13 Chapter 13 Shaping up Your Geometry
- *GED Math 14-Chapter 14 How Many? Long? Big? Full? Heavy?
- *GED Math 15-Chapter 15 “The James”

Math! A Four Letter Word (1988)

VC 510.712 M42

Mathematics for Elementary Teachers 2001

CD-ROM 510 M42E 2001

The Math Tutor (1986)

VC 510.7 M42 (Pt. 1 – 9)

- Pt. #1 - Algebraic Terms & Operations
- #2 - Solve Algebraic Equations 1st Degree & Inequalities
- #3 - Factor and Solve Quadratic Equations
- #4 - Solve Simultaneous Equations & Inequalities Algebraically & Geometrically
- #5 - Verbal Problems & Introduction to Trigonometry
- #6 - Introduction to Logic
- #7 - Introduction to Probability & Statistics
- #8 - Introduction to Geometric Terms, Angles, & Triangles
- #9 - The Geometry of Parallel Line, Geometric Figures, The Parallelogram & Circles

Why Study Math (1989)

VC 510 W622

Computer Software

Derive 6

CD 512.1 D445 2004

LEARNING LAB

BUSINESS

RESOURCE MANUAL

2008 – 2009



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Economics

DiscoverEcon 3.0 software tutorial
McGraw Hill, 1999

CD-ROM 330.220 D631 1999

American Enterprise
American Enterprises, 1976

VC 330 Am35 (Pts. 1-5; 28 min. ea.)

Pt. #:

1. Land
2. People
3. Innovation
4. Organization
5. Government

Economics made memorable: videos to accompany Principles of economics
Video Library, 2001

VC 330 EC74 (Pts. 1-5; 11 min. ea.)

Pt. #:

1. Opportunity cost
2. Reservation price
3. Supply and demand
4. Elasticity

Medicine and money, parts 1 and 2
McGraw-Hill Films, 1976

VC 368.426 M468 (Pts.1-2; 25 min. ea.)

Summary: Investigates the factors which have turned the practice of medicine into an industry. Discusses problems connected with federally-funded programs such as Medicare and Medicaid and focuses on the lack of accountability for both the quality of care and the cost.

Man and the Industrial Revolution

American Broadcasting Co., 1970

VC 330.9 M311 (21 min.)

Series: History of man series

Summary: Describes the beginnings of the first industrial revolution in Europe, its spread, and its social, political, and technological implications.

Man and the Second Industrial Revolution

American Broadcasting Co., 1970

VC 330.9 M311s (20 min.)

Series: History of man series

Summary: Shows how man is using new technological knowledge to change the world and to reach out to new worlds. Poses the problems that have come with this knowledge: overpopulation, pollution, and the ability to destroy the environment. Provides a point of departure for discussion on how the future of men will be written.

Can Working Women Have It All

Films for the Humanities, 1986

VC 331.4 D714c (30 min.)

Summary: Panelists join Phil Donahue and his audience in exploring the issues confronting today's women and the choices they must make.

Careers and Values: Understanding the Choices

Sunburst Communications, 1982

VC 331.702 C18 (31 min.)

Pt. #:

1. What matters to you?
2. How to decide.

We're America's Teamsters

International Brotherhood of Teamsters, 198?

VC 331.881 W492 (28 min.)

Masses and the Millionaires: The Homestead Strike (The Shaping of the American Nation)
Learning Corp. of America, 1974

VC 331.89 M384 (26 min.)

Series: The shaping of the American nation

Summary: A dramatization of the strike at the Homestead Steel Mills which took place in 1892 and ended in violence. Provides insight into the beginnings of labor-management dealings in the United States.

The Stock Market

Increase Video, 1984

VC 332.642 St62 (26 min.)

Abstract: This program offers the investment novice an explanation of how the stock market functions. It includes a history of the market and defines associated terminology.

Marketing And Management

The Constitution: That Delicate Balance Affirmative Action Versus Reverse Discrimination

Films Incorporated, 1984

VC 342.73 C766 Pt.12 (60 min.) - Affirmative action versus reverse discrimination

Time Management for Managers

Time Life Video, 1986

VC 658.4093 T482 (Pts 1- 6; 25 min. ea.)

Pt. #

1. Principles of Time Management
2. Decision Making
3. Delegating
4. Scheduling
5. Managing Interruptions
6. Managing Time: Professional & Personal

Effective Business Presentations Tape 1 -3

Zig Ziglar Corp., 1987

VC 658.45 Ef36 (Pts 1– 3; 50 min. ea) *Audio cassette*

Pt. #:

1. Communications in management.
2. Oral communication
3. Persuasion (Rhetoric)

Selling the Proud Profession

Zig Ziglar Corp., 1983

VC 658.85Se48 (37 min.) *Audio cassette*

Business Etiquette

10 basics of business etiquette

Meridian Education Corp., 1993

VC 395.52 T25TE (22 min.)

Summary: A quick review of the common courtesies of the work place, including handling introductions, making entrances, telephoning, note writing and more.

Telephone skills: courtesy on the line

McGraw-Hill Training Systems, 1985

VC 651.7 T236 (14 min.)

Summary: Illustrates the proper use of the telephone in a business setting.

Business Communication

Communication on the job

Victoria Learning Systems, 1990

CD 651.7 C737

Series: Work and career series

Powerful ways to persuade people

Communication Briefings, 1990

VC 153.852 P871 (42 min.)

Abstract: This program discusses persuasion techniques including analyzing needs and expectations; then gearing the message to the audience.

Success in Business

Keeping your job

EA Video, 1997

CD-ROM 650.14 K254K

Abstract: Viewers learn important skills such as being on time, being honest, being disciplined, managing your time, and other important skills needed to do a job well, as well as keep a job.

Planning your future

Education Associates, 1987

VC 650.14 P693 (10 min.)

LEARNING LAB

COMPUTER SCIENCE

RESOURCE MANUAL

2008 – 2009



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History of Computing

The Machine That Changed the World

Films for the Humanities & Sciences, Inc., 1992, the WGBH Collection

VC 004 M184 (58 minutes each - closed captioned for the hearing impaired)

Pt #:

1. Giant Brains
2. Inventing the Future
3. The paperback computer
4. The Thinking Machine
5. The World at your Fingertips

Summary: This series traces the history of computers, from ENIAC to the Apple. It discusses the people and companies involved in the development of computers, and the social repercussions of the computer revolution.

Triumph of the Nerds

Oregon Public Broadcasting & John Gau Production for PBS Ambrose Video Publishing Inc. OPB, 1996

VC 338.761 T739 (55 minutes each)

PT #:

1. Impressing their Friend
2. Riding the Bear
3. Great Artists Steal

Summary: Triumph of the Nerds is an irreverent, witty and energetic history of the personal computer industry and its creators, based on the best-selling book, Accidental Empires.

Nerds 2.0.1 A Brief History of the Internet

Oregon Public Broadcasting, PBS, 1998

VC 338.761 N355 (60 minutes each)

Vol #:

1. Networking the Nerds
2. Serving the Suits
3. Wiring the World

Summary: This sequel to the 1996 hit Triumph of the Nerd leads viewers through the ins and outs of one of the most exciting and volatile industries on the planet - the Internet.

Women in Computer Science

The Computing Research Association (CRA), University Video Communications, 1995

VC 004.082 W842c (55 minutes)

Summary: This tape covers material on women and computer science.

Women in the History of Computer Science

The Computing Research Association (CRA), University Video Communications, 1995

VC 004.082 W842h (90 minutes)

Summary: Women in the History of Computer Science provides an opportunity to hear and learn the hidden history of the period (1940s and 1950s).

Interface: The Future of Technology

Jones Education Media, 1997

VC 302.23 In8 (23 minutes)

Summary: Interface: The Future of Technology is a presentation of the Global Library Project, a cooperative venture of the Library of Congress and Knowledge TV.

Wired World

National Geographic Television (NGT, Inc), Education Films, 1997

VC 302.2 W743 (25 minutes)

Summary: National Geographic Television presents a history of communication from cave drawings to computers. There is a teacher's guide with objectives.

Internet Curriculum Integration

Internet Curriculum Integration

Classroom Connect, 1996

VC 371.3 In8 PT. 1 (28 min. ea.)

PT #:

1. Curriculum integration 101
2. Creating Internet lesson plans
3. Creating Internet projects

Summary: These programs give step-by-step instructions to successfully integrate the Internet into your classroom.

Programming Reference Books

C Memory Management Techniques

Windcrest/McGraw Hill, 1993

Len Dorman and Marc J. Neuberger

005.43 D732c

Summary: C Memory Management Techniques contains all the hands-on tools needed to create memory-efficient application programs. The clear, step-by-step instructions and extensive source code make it easy to take advantage of extended, expanded, and hard disk memory. After an overview of PC memory management, a wealth of sample programs is provided for EMS 3.0, 3.2, and 4.0, as well as SMS 2.0. A full demo program source code can be found for each Ems and XMS function covered. Also included is the source code for a powerful set of virtual memory allocation functions that will give the program dynamic access to memory areas in the multi-megabyte range. In addition, a complete library of ready to use memory management functions is provided on disk.

C++ Neural Networks and Fuzzy Logic

MIS:Press, 1993

Valluru B. Rao and Hayagriva V. Rao

006.3 R18c

Summary: C++ Neural Networks And Fuzzy Logic is a manual, complemented by a programming disk, providing a logical and easy-to-follow progression through topics in C++ programming for Neural Networks, and Fuzzy Logic technologies. The authors present numerous examples in C++ for use with most C++ compilers, including Borland and Microsoft C++. With real-world examples, the user is shown how to implement these new technologies in applications. To demonstrate the diverse ways in which these technologies can be applied, the user will find examples in the fields of pattern recognition, optimization and financial modeling. Also included is working code with which the user can experiment to increase his knowledge of the subject matter.

Exploring Mathematics with Your Computer

Mathematical Association of America, 1993

Arthur Engel

510.285 En32e

Summary: Exploring Mathematics With Your Computer is a mathematics, not a programming book. It is intended for students, mathematics' teachers, and mathematicians who are just starting to explore mathematics on their own computer. In studying it, and especially in working through its exercises students will get to know many new, elementary topics and learn as much from the extensive exercises as from the examples. It includes a large number of challenging problems, which illustrate how computing leads to conjectures; many of which can then be proven by mathematical reasoning. The manual and program disk use Turbo Pascal. Only a fragment of the dialect is needed, and is easily picked up by readers as they work their way through the examples and exercises. The programs are short and, for the most part, comprehensible without comment.

Finite Elements 1-2-3

McGraw-Hill, 1991

A. J. Baker and D. W. Pepper

620.0015 B171f

Summary: Finite Elements 1-2-3 and the accompanying PC-based Computational Mechanics laboratory have emerged from over a decade of learning how to teach the introductory level of finite element analysis to practicing engineers functioning in the real world. This program is written specifically for the bachelor's level engineer, scientist, and / or upper-division undergraduate student with a curiosity about, to little or no experience with, the finite element method. The methods of the finite element method for solving diffusion and transport equations are developed throughout the text, and the resulting algorithm logic is implemented within the provided computer program diskette.

Fractal Programming In Turbo Pascal

M&T Books, 1990

Robert T. Stevens

005.133 St47f

Summary: Fractal Programming In Turbo Pascal is a comprehensive reference that provides students with the tools needed to program the many fractal curves already invented. Fractal Programming in Turbo Pascal develops the user's understanding of the many different types of fractal curves while creating computer programs to generate these fascinating curves. These practical programs teach students the techniques needed to generate pictures that have both amazing beauty and an underlying mathematical meaning. The user will find discussions of well-known fractal curves such as the van Koch snowflake, the Gosper curve, dragon curves, and the Mandelbrot set, together with the source code for plotting and investigation them. Also included is a detailed description of how to create displays of the Julia set, and Turbo Pascal programs to reproduce the more than 100 black-and white fractals and 32 full-colored fractals illustrated throughout the book and source diskette.

True Basic Reference Manual

True BASIC, Inc., 1988

John G. Kemeny and Thomas E. Kurtz

005.133 K314r

Summary: True Basic is a manual and Language system and Runtime Package diskette that tells how to use TRUE BASIC on you IBM PC, PS/2, or compatible. It is not an introduction to BASIC.

Manuals

Microsoft Office 2007: Introductory Concepts And Techniques

Thomson Course Technology, 2008

Gary B. Shelly

MAN 005.369 Sh44m

Summary: Microsoft Office 2007: Introductory Concepts and Techniques is a step-by-step, screen-by-screen approach that encourages understanding of the Microsoft Office 2007 software through experimentation, exploration, and planning ahead. End-of-chapter exercises prepare users by requiring them to use critical thinking and problem-solving skills to create real-life documents.

Question Designer Quizzes

The quizzes are designed to accompany the Introduction to Computing-Computing Essentials text. (Transferred from the Computing Essentials 2007 Instructor's Resource CD-ROM)

* Located on the learning lab computer desktops as a big red '?' labeled "Computer Science" *

Lessons:

- Chapter 1-Information Technology, the Internet, and You
- Chapter 2-Interenet, Web & Electronic Commerce
- Chapter 3- Basic Application Software
- Chapter 4-Specialized Application Software
- Chapter 5-System Software
- Chapter 6-The System Unit
- Chapter 7-Input Output
- Chapter 8-Secondary Storage
- Chapter 9-Communications and Networks
- Chapter 10-Privacy and Security
- Chapter 11-Databases
- Chapter 11-Information Systems
- Chapter 12-Databases
- Chapter 15-Your Future and Information Technology