



**GRADES K-8**



**GRADES 9-12**



**ADULT EDUCATION**

## SYLLABUS

## COMPLETE INTERACTIVE FLEXIBLE LEARNING SYSTEM

### CLEP College Level Test Prep

College Level Examination Program or CLEP test provides students of any age with the opportunity to demonstrate college-level achievement through a program of exams in undergraduate college courses. There are 2,900 colleges that grant credit and/or advanced standing for CLEP tests.

#### CLEP College Math

- (1) Sets
- (1A) Union and Intersection
- (1B) Subsets
- (1C) Venn Diagrams
- (2) Logic
- (2A) Truth Tables
- (2B) Conjunctions, Disjunctions, Implications & Negations
- (2C) Conditional Statements
- (2D) Necessary & Sufficient Conditions
- (2E) Converse, Inverse, & Contrapositive
- (2F) Hypotheses, Conclusions, & Counterexamples
- (3) Real Numbers
- (3A) Prime & Composite Numbers
- (3B) Odd & Even Numbers
- (3C) Factors & Divisibility
- (3D) Rational & Irrational Numbers
- (3E) Absolute Value & Order
- (4) Functions & Graphs
- (4A) Properties & Graphs of Functions
- (4B) Domain & Range
- (4C) Composition of Functions & Inverse Functions
- (4D) Solving Quadratic Equations
- (4E) Remainder Theorem
- (5) Probability & Statistics
- (5A) Counting Problems, Including Permutations & Combinations
- (5B) Computation of Probabilities of Simple & Compound Events
- (5C) Simple Conditional Probability
- (5D) Mean & Median
- (6) Additional Topics From Algebra & Geometry
- (6A) Complex Numbers
- (6B) Logarithms & Exponents
- (6C) Applications from Algebra & Geometry
- (6D) Properties of Triangles & Circles
- (6E) The Pythagorean Theorem
- (6F) Parallel and Perpendicular Lines
- (6G) Problem Solving Applications
- TEST

#### CLEP College Algebra

- (1) Algebraic Operations
- (1A) Combining Algebraic Expressions
  - Signed Numbers
  - Order of Operations
  - Variables
  - Expressions
- (1B) Factoring
  - Common Monomial Factors
  - Common Binomial Factors
  - Difference of Perfect Squares
  - Factoring Cubes
  - Factor by Grouping
  - Factoring Quadratics
  - Simplifying Algebraic Fractions
  - Operations with Powers and Root
- (1C) Simplifying Algebraic Fractions
- (1D) Operating with Powers and Roots
  - Multiplication
  - Division
  - Power of a Power
  - Roots and Radicals
  - Negative Exponents
  - Fractional Exponents
  - Challenge
  - Drill and Practice
- (2) Equations, Inequalities & their Graphs
- (2A) Linear Equations and Inequalities
  - Open Sentences
  - Graphs
  - Slope
  - Equations
  - Systems of Linear Equations
  - Problem Solving
  - Inequalities
  - Functions
  - Linear Functions
  - Relations
- (2B) Quadratic Equations
  - How to Complete the Square
  - Quadratic Formula
  - What is the Discriminant?
  - Quadratic Equations
  - Graphing
  - Analyze Quadratic Functions
  - Sum and Product
  - Problem Solving
  - TEST
- ((3) Algebraic, Exponential & Log Functions and their Graphs
- (3A) Domain and Range
- (3B) Composition and Inverse Functions
- (3C) Logarithmic Functions Menu
  - Definition
  - Product Property
  - Quotient Property
  - Property of a Power
  - Solving Equations
  - Natural Logs
  - Quiz
- (4) Miscellaneous Topics
- (4A) Sets
- (4B) Real Numbers
  - (4B1) Prime and Composite Numbers
  - (4B2) Odd and Even Numbers
  - (4B3) Factors and Divisibility
  - (4B4) Rational and Irrational Numbers
  - (4B5) Absolute Value and Order
- (4C) Complex Numbers
- (4D) Series and Sequences
  - What is a Sequence?
  - Arithmetic Sequence
  - Geometric Sequence
  - What is a Series?
  - Arithmetic and Geometric Sums
  - Infinite Geometric Series
  - Powers of Binomials
  - Binomial Theorem
  - Problem Solving
  - TEST

#### Trigonometry (Part 1, Menu #1)

- Right Triangle Review
- The Unit Circle
- Radians & Degrees
- Reference Angles
- sin, cos, tan
- csc, sec, cot
- Amplitude, Period, Phase Shift
- Inverses
- Vocabulary
- Test (Menu #1)

#### Trigonometry (Part 1, Menu #2)

- Length of an Arc
- Conversion Factors
- Angular Velocity
- Linear Velocity
- Area of Circular Sector
- Area of Circular Segment
- Vocabulary
- Test (Menu #2)

#### Trigonometry (Part 2, Menu #1)

- Trig Identities
- Trig Proofs
- Double Angle Formulas
- Half Angle Formulas
- Sum & Difference Formulas
- Expressions & Equations
- Test (Menu #1)

#### Trigonometry (Part 2, Menu #2)

- Solving Right Triangles
- Law of Cosines
- Law of Sines
- Area of a Triangle
- Vectors
- Real World Problems
- Polar Coordinates
- DeMoirve's Theorem
- Test (Menu #2)

#### Pre-Calculus College Algebra & Trig

- Algebraic Operations
- Equations, Inequalities and their Graphs
- Algebraic, Exponential, and Log Functions and their Graphs
- Miscellaneous Topics