

PURDUE UNIVERSITY
STUDY GUIDE FOR COLLEGE ALGEBRA AND TRIGONOMETRY, MA 159
For Students Who Plan To Obtain Credit In MA 159 By Examination

This Study Guide describes briefly the topics to be mastered prior to attempting the examination in Algebra and Trigonometry. The material can be studied from many of the books on the market. Books with Algebra and Trigonometry in the title or separate books for Algebra and Trigonometry will do. All of the topics listed are found in the text Algebra and Trigonometry with Analytic Geometry, Classic 10th Edition, By Earl W. Swokowski and Jeffery A. Cole; Brooks/Cole Publishing Co. 2003.

IMPORTANT:

1. If you plan to establish credit by examination, read this material thoroughly.
2. Study all of the material listed in the outline.
3. Work many practice problems.
4. When you feel you are prepared for it, take the sample examination.
5. When you believe your preparation to be completed, go to your academic advisor, obtain a credit-exam request form, and follow the instructions given therein.
6. A scientific calculator is required when you take the exam (**single-line display**, non-programmable, non-graphing).

The topics to be studied prior to attempting the sample examination are broken down under several headings according to those found in the text currently at use at Purdue.

FUNDAMENTAL CONCEPTS OF ALGEBRA - real numbers, coordinate lines, integral exponents, radicals, rational exponents, polynomials and algebraic expressions, factoring, fractional expressions.

EQUATIONS AND INEQUALITIES - linear equations, quadratic equations, miscellaneous equations, variation equations, inequalities, applications.

FUNCTIONS - coordinate systems in two dimensions, properties of functions, graphs, linear functions, composition of functions, inverse functions.

POLYNOMIAL FUNCTIONS, RATIONAL FUNCTIONS - operations on polynomials and rational functions, quadratic functions, polynomial functions of degree greater than 2, rational functions, graphs.

EXPONENTIAL AND LOGARITHMIC FUNCTIONS - exponential functions, logarithmic functions, properties of logarithms and exponents, exponential and logarithmic equations.

SYSTEMS OF EQUATIONS - systems of equations, systems of linear equations in two variables, and in more than two variables.

THE TRIGONOMETRIC FUNCTIONS - the trigonometric functions, angles in radians and degrees, trigonometric functions of angles, values of the trigonometric functions, graphs of the trigonometric functions, applications involving right triangles.

ANALYTIC TRIGONOMETRY - the fundamental identities, trigonometric identities, trigonometric equations, multiple angle formulas.

COMPLEX NUMBERS - definition of complex numbers, operations on complex numbers, complex roots of equations.

ADDITIONAL TOPICS - polar coordinates.

A table of formulas is included with the exam. Some sample questions are attached.