

Chapters include: Linear Coordinate Systems, Absolute Value, Inequalities • Rectangular Coordinate Systems • Lines • Circles • Equations and Their Graphs • Functions • Limits • Continuity • The Derivative • Rules for Differentiating Functions • Implicit Differentiation • Tangents and Normal Lines • Law of the Mean, Increasing and Decreasing Functions • Maximum and Minimum Values • Curve Sketching, Concavity, Symmetry • Review of Trigonometry • Differentiation of Trigonometric Functions • Inverse Trigonometric Functions • Rectilinear and Circular Motion • Related Rates • Differentials, Newton's Method • Antiderivatives • The Definite Integral, Area Under a Curve • The Fundamental Theorem of Calculus • The Natural Logarithm • Exponential and Logarithmic Functions • L'Hôpital's Rule • Exponential Growth and Decay • Applications of Integration I: Area and Arc Length • Applications of Integration II: Volume • Techniques of Integration I: Integration by Parts • Techniques of Integration II: Trigonometric Integrands and Trigonometric Substitutions • Techniques of Integration III: Integration by Partial Fractions • Miscellaneous Substitutions • Improper Integrals • Applications of Integration III: Area of a Surface of Revolution • Parametric Representation of Curves • Curvature • Plane Vectors • Curvilinear Motion • Polar Coordinates • Infinite Sequences • Infinite Series • Series with Positive Terms, The Integral Test, Comparison Tests • Alternating Series, Absolute and Conditional Convergence, The Ratio Test • Power Series • Taylor and Maclaurin Series, Taylor's Formula with Remainder • Partial Derivatives • Total Differential, Differentiability, Chain Rules • Space Vectors • Surfaces and Curves in Space • Directional Derivatives, Maximum and Minimum Values • Vector Differentiation and Integration • Double and Iterated Integrals • Centroids and Moments of Inertia of Plane Areas • Double Integration Applied to a Volume Under a Surface and the Area of a Curved Surface • Triple Integrals • Masses of Variable Density • Differential Equations of First and Second Order • Appendixes include: Trigonometric Formulas • Geometric Formulas