- 11 Parametric Equations and Polar Coordinates
- Curves Defined by Parametric Equations, Laboratory Project: Families of Hypocycloids
- Calculus with Parametric Curves, Laboratory Project: Bezier Curves
- Polar Coordinates
- Areas and Lengths in Polar Coordinates
- Conic Sections
- Conic Sections in Polar Coordinates
- Review
- Problems Plus
- 12 Infinite Sequences and Series
- Sequences, Laboratory Project: Logistic Sequences
- Series
- The Integral Test and Estimates of Sums
- The Comparison Tests
- Alternating Series
- Absolute Convergence and the Ratio and Root Tests
- Strategy for Testing Series
- Power Series
- Representation of Functions as Power Series
- Taylor and Maclaurin Series
- Laboratory Project: An Ellusive Limit
- The Binomial Series, Writing Project: How Newton Discovered the Binomial Series
- Applications of Taylor Polynomials, Applied Project: Radiation from the Stars
- Review
- Problems Plus
- 13 Vectors and the Geometry of Space
- Three-Dimensional Coordinate Systems
- Vectors
- The Dot Product
- The Cross Product, Discovery Project: The Geometry of a Tetrahedron
- Equations of Lines and Planes
- Cylinders and Quadric Surfaces
- Cylindrical and Spherical Coordinates, Laboratory Project: Families of Surfaces
- Review
- Problems Plus
- 14 Vector Functions
- Vector Functions and Space Curves
- Derivatives and Integrals of Vector Functions
- Arc Length and Curvature
- Motion in Space: Velocity and Acceleration, Applied Project: Kepler's Laws
- Review
- Problems Plus
- 15 Partial Derivatives
- Functions of Several Variables
- Limits and Continuity

- Partial Derivatives
- Tangent Planes and Linear Approximations
- The Chain Rule
- Directional Derivatives and the Gradient Vector
- Maximum and Minimum Values, Applied Project: Designing a Dumpster, Discovery Project: Quadratic Approximations and Critical Points
- Lagrange Multipliers, Applied Project: Rocket Science, Applied Project: Hydro-Turbine Optimization
- Review
- Problems Plus
- 16 Multiple Integrals
- Double Integrals over Rectangles
- Iterated Integrals
- Double Integrals over General Regions
- Double Integrals in Polar Coordinates
- Applications of Double Integrals
- Surface Area
- Triple Integrals, Discovery Project: Volumes of Hyperspheres
- Triple Integrals in Cylindrical and Spherical Coordinates, Applied Project: Roller Derby, Discovery Project: The Intersection of Three Cylinders
- Change of Variables in Multiple Integrals
- Review
- Problems Plus
- 17 Vector Calculus
- Vector Fields
- Line Integrals
- The Fundamental Theorem for Line Integrals
- Green's Theorem
- Curl and Divergence
- Parametric Surfaces and Their Areas
- Surface Integrals
- Stokes' Theorem, Writing Project: Three Men and Two Theorems
- The Divergence Theorem
- Summary
- Review
- Problems Plus
- 18 Second-Order Differential Equations
- Second-Order Linear Equations
- Nonhomogeneous Linear Equations
- Applications of Second-Order Differential Equations
- Series Solutions. Review. Problems Plus
- Appendixes
- Answers to Odd-Numbered Exercises
- Index