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Autore	Thomas G. B (George B.)
Titolo	Thomas' calculus in SI units // George B. Thomas [and four others]
Pubbl/distr/stampa	Boston : , : Pearson, , [2016] Â©2016
Edizione	[Thirteenth edition, global edition.]
Descrizione fisica	1 online resource (137 pages) : illustrations (some color), photographs
Collana	Always learning
Disciplina	515
Soggetti	Calculus Calculus - Data processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover -- Thomas' Calculus: Thirteenth Edition in SI Units -- Copyright -- Contents -- Preface -- Chapter 1: Functions -- Functions and Their Graphs -- Combining Functions -- Shifting and Scaling Graphs -- Trigonometric Functions -- Graphing with Software -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 2: Limits and Continuity -- Rates of Change and Tangents to Curves -- Limit of a Function and Limit Laws -- The Precise Definition of a Limit -- One-Sided Limits -- Continuity -- Limits Involving Infinity -- Asymptotes of Graphs -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 3: Derivatives -- Tangents and the Derivative at a Point -- The Derivative as a Function -- Differentiation Rules -- The Derivative as a Rate of Change -- Derivatives of Trigonometric Functions -- The Chain Rule -- Implicit Differentiation -- Related Rates -- Linearization and Differentials -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 4: Applications of Derivatives -- Extreme Values of Functions -- The Mean Value Theorem -- Monotonic Functions and the First Derivative Test -- Concavity and Curve Sketching -- Applied Optimization -- Newton's Method -- Antiderivatives -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 5: Integrals -- Area and Estimating with Finite Sums -- Sigma Notation

and Limits of Finite Sums -- The Definite Integral -- The Fundamental Theorem of Calculus -- Indefinite Integrals and the Substitution Method -- Definite Integral Substitutions and the Area Between Curves -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 6: Applications of Definite Integrals -- Volumes Using Cross-Sections. Volumes Using Cylindrical Shells -- Arc Length -- Areas of Surfaces of Revolution -- Work and Fluid Forces -- Moments and Centers of Mass -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 7: Transcendental Functions -- Inverse Functions and Their Derivatives -- Natural Logarithms -- Exponential Functions -- Exponential Change and Separable Differential Equations -- Indeterminate Forms and L'Hopital's Rule -- Inverse Trigonometric Functions -- Hyperbolic Functions -- Relative Rates of Growth -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 8: Techniques of Integration -- Using Basic Integration Formulas -- Integration by Parts -- Trigonometric Integrals -- Trigonometric Substitutions -- Integration of Rational Functions by Partial Fractions -- Integral Tables and Computer Algebra Systems -- Numerical Integration -- Improper Integrals -- Probability -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 9: First-Order Differential Equations -- Solutions, Slope Fields, and Euler's Method -- First-Order Linear Equations -- Applications -- Graphical Solutions of Autonomous Equations -- Systems of Equations and Phase Planes -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 10: Infinite Sequences and Series -- Sequences -- Infinite Series -- The Integral Test -- Comparison Tests -- Absolute Convergence -- The Ratio and Root Tests -- Alternating Series and Conditional Convergence -- Power Series -- Taylor and Maclaurin Series -- Convergence of Taylor Series -- The Binomial Series and Applications of Taylor Series -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises. Chapter 11: Parametric Equations and Polar Coordinates -- Parametrizations of Plane Curves -- Calculus with Parametric Curves -- Polar Coordinates -- Graphing Polar Coordinate Equations -- Areas and Lengths in Polar Coordinates -- Conic Sections -- Conics in Polar Coordinates -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 12: Vectors and the Geometry of Space -- Three-Dimensional Coordinate Systems -- Vectors -- The Dot Product -- The Cross Product -- Lines and Planes in Space -- Cylinders and Quadric Surfaces -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 13: Vector-Valued Functions and Motion in Space -- Curves in Space and Their Tangents -- Integrals of Vector Functions -- Projectile Motion -- Arc Length in Space -- Curvature and Normal Vectors of a Curve -- Tangential and Normal Components of Acceleration -- Velocity and Acceleration in Polar Coordinates -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 14: Partial Derivatives -- Functions of Several Variables -- Limits and Continuity in Higher Dimensions -- Partial Derivatives -- The Chain Rule -- Directional Derivatives and Gradient Vectors -- Tangent Planes and Differentials -- Extreme Values and Saddle Points -- Lagrange Multipliers -- Taylor's Formula for Two Variables -- Partial Derivatives with Constrained Variables -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 15: Multiple Integrals -- Double and Iterated Integrals over

Rectangles -- Double Integrals over General Regions -- Area by Double Integration -- Double Integrals in Polar Form -- Triple Integrals in Rectangular Coordinates -- Moments and Centers of Mass. Triple Integrals in Cylindrical and Spherical Coordinates -- Substitutions in Multiple Integrals -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 16: Integrals and Vector Fields -- Line Integrals -- Vector Fields and Line Integrals: Work, Circulation, and Flux -- Path Independence, Conservative Fields, and Potential Functions -- Green's Theorem in the Plane -- Surfaces and Area -- Surface Integrals -- Stokes' Theorem -- The Divergence Theorem and a Unified Theory -- Questions to Guide Your Review -- Practice Exercises -- Additional and Advanced Exercises -- Chapter 17: Second-Order Differential Equations -- Second-Order Linear Equations -- Nonhomogeneous Linear Equations -- Applications -- Euler Equations -- Power Series Solutions -- Appendices -- Real Numbers and the Real Line -- Mathematical Induction -- Lines, Circles, and Parabolas -- Proofs of Limit Theorems -- Commonly Occurring Limits -- Theory of the Real Numbers -- Complex Numbers -- The Distributive Law for Vector Cross Products -- The Mixed Derivative Theorem and the Increment Theorem -- Answers to Odd-Numbered Exercises -- Credits -- Index -- A Brief Table of Integrals -- Basic Formulas and Rules.

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### Sommario/riassunto

This text is designed for a three-semester or four-quarter calculus course (math, engineering, and science majors). Thomas' Calculus, Thirteenth Edition, introduces students to the intrinsic beauty of calculus and the power of its applications. For more than half a century, this text has been revered for its clear and precise explanations, thoughtfully chosen examples, superior figures, and time-tested exercise sets. With this new edition, the exercises were refined, updated, and expanded—always with the goal of developing technical competence while furthering students' appreciation of the subject. Co-authors Hass and Weir have made it their passion to improve the text in keeping with the shifts in both the preparation and ambitions of today's students. The text is available with a robust MyMathLab® course—an online homework, tutorial, and study solution. In addition to interactive multimedia features like lecture videos and eBook, nearly 9,000 algorithmic exercises are available for students to get the practice they need. Please note that the product you are purchasing does not include access to MyMathLab®. Students, if MyMathLab is a recommended/mandatory component of the course, please ask your instructor for the correct ISBN and course ID. Instructors can contact their Pearson representative for more information. MyMathLab is an online homework, tutorial, and assessment product designed to personalize learning and improve results. With a wide range of interactive, engaging, and assignable activities, students are encouraged to actively learn and retain tough course concepts.

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