

1. Record Nr.	UNINA9910153239403321
Autore	Briggs William L.
Titolo	Calculus : early transcendentals / / William L. Briggs [and three others]
Pubbl/distr/stampa	Harlow, England : , : Pearson, , [2015] ©2015
Edizione	[Second, Global edition.]
Descrizione fisica	1 online resource (1,312 pages) : color illustrations
Collana	Always Learning
Disciplina	515
Soggetti	Calculus
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- Preface -- Acknowledgments -- Credits -- 1 Functions -- 1.1 Review of Functions -- 1.2 Representing Functions -- 1.3 Inverse, Exponential, and logarithmic Functions -- 1.4 Trigonometric Functions and Their inverses -- Review Exercises -- 2 Limits -- 2.1 The idea of limits -- 2.2 Definitions of limits -- 2.3 Techniques for computing limits -- 2.4 Infinite limits -- 2.5 Limits at infinity -- 2.6 Continuity -- 2.7 Precise definitions of limits -- Review Exercises -- 3 Derivatives -- 3.1 Introducing the derivative -- 3.2 Working with derivatives -- 3.3 Rules of differentiation -- 3.4 The Product and Quotient rules -- 3.5 Derivatives of Trigonometric Functions -- 3.6 Derivatives as rates of change -- 3.7 The chain rule -- 3.8 Implicit differentiation -- 3.9 Derivatives of logarithmic and Exponential Functions -- 3.10 Derivatives of inverse Trigonometric Functions -- 3.11 Related rates -- Review Exercises -- 4 Applications of the derivative -- 4.1 Maxima and minima -- 4.2 What derivatives Tell us -- 4.3 Graphing Functions -- 4.4 Optimization Problems -- 4.5 Linear approximation and differentials -- 4.6 Mean Value Theorem -- 4.7 L'hospital's rule -- 4.8 Newton's method -- 4.9 Antiderivatives -- Review Exercises -- 5 Integration -- 5.1 Approximating areas under curves -- 5.2 Definite integrals -- 5.3 Fundamental Theorem of calculus -- 5.4 Working with integrals -- 5.5 Substitution rule -- Review Exercises -- 6 Applications of integration -- 6.1 Velocity and net change -- 6.2 Regions between curves -- 6.3 Volume by slicing -- 6.4 Volume by shells -- 6.5 Length

of curves -- 6.6 Surface area -- 6.7 Physical applications -- 6.8 Logarithmic and Exponential Functions revisited -- 6.9 Exponential models -- 6.10 Hyperbolic Functions -- Review Exercises -- 7 Integration Techniques -- 7.1 Basic approaches. 7.2 Integration by Parts -- 7.3 Trigonometric integrals -- 7.4 Trigonometric substitutions -- 7.5 Partial Fractions -- 7.6 Other integration strategies -- 7.7 Numerical integration -- 7.8 Improper integrals -- 7.9 Introduction to differential Equations -- Review Exercises -- 8 Sequences and infinite series -- 8.1 An overview -- 8.2 Sequences -- 8.3 Infinite series -- 8.4 The divergence and integral Tests -- 8.5 The ratio, root, and comparison Tests -- 8.6 Alternating series -- Review Exercises -- 9 Power series -- 9.1 Approximating Functions with Polynomials -- 9.2 Properties of Power series -- 9.3 Taylor series -- 9.4 Working with Taylor series -- Review Exercises -- 10 Parametric and Polar curves -- 10.1 Parametric Equations -- 10.2 Polar coordinates -- 10.3 Calculus in Polar coordinates -- 10.4 Conic sections -- Review Exercises -- 11 Vectors and Vector-Valued Functions -- 11.1 Vectors in the Plane -- 11.2 Vectors in Three dimensions -- 11.3 Dot Products -- 11.4 Cross Products -- 11.5 Lines and curves in space -- 11.6 Calculus of Vector-Valued Functions -- 11.7 Motion in space -- 11.8 Length of curves -- 11.9 Curvature and normal Vectors -- Review Exercises -- 12 Functions of several Variables -- 12.1 Planes and surfaces -- 12.2 Graphs and level curves -- 12.3 Limits and continuity -- 12.4 Partial derivatives -- 12.5 The chain rule -- 12.6 Directional derivatives and the Gradient -- 12.7 Tangent Planes and linear approximation -- 12.8 Maximum/minimum Problems -- 12.9 Lagrange multipliers -- Review Exercises -- 13 Multiple integration -- 13.1 Double integrals over rectangular regions -- 13.2 Double integrals over General regions -- 13.3 Double integrals in Polar coordinates -- 13.4 Triple integrals -- 13.5 Triple integrals in cylindrical and spherical coordinates -- 13.6 Integrals for mass calculations. 13.7 Change of Variables in multiple integrals -- Review Exercises -- 14 Vector calculus -- 14.1 Vector Fields -- 14.2 Line integrals -- 14.3 Conservative Vector Fields -- 14.4 Green's Theorem -- 14.5 Divergence and curl -- 14.6 Surface integrals -- 14.7 Stokes' Theorem -- 14.8 Divergence Theorem -- Review Exercises -- Appendix A Algebra review -- Appendix B Proofs of selected Theorems -- Answers -- Index -- Table of integrals.

Sommario/riassunto

For a three-semester or four-quarter calculus course covering single variable and multivariable calculus for mathematics, engineering, and science majors. This much anticipated second edition of the most successful new calculus text published in the last two decades retains the best of the first edition while introducing important advances and refinements. Authors Briggs, Cochran, and Gillett build from a foundation of meticulously crafted exercise sets, then draw students into the narrative through writing that reflects the voice of the instructor, examples that are stepped out and thoughtfully annotated, and figures that are designed to teach rather than simply supplement the narrative. The authors appeal to students' geometric intuition to introduce fundamental concepts, laying a foundation for the development that follows. The groundbreaking eBook contains over 650 Interactive Figures that can be manipulated to shed light on key concepts. This text offers a superior teaching and learning experience. Here's how: A robust MyMathLab® course contains more than 7,000 assignable exercises, an eBook with 650 Interactive Figures, and built-in tutorials so students can get help when they need it. Reflects how students use a textbook-they start with the exercises and

flip back for help if they need it. Organization and presentation of content facilitates learning of key concepts, skills, and applications.
