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of Graphical Integration; 6. Further Remarks on the Connexion between the Integral and the Derivative; 7. The Estimation of Integrals and the Mean Value Theorem of the Integral Calculus; APPENDIX
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8. The Hyperbolic Functions9. The Order of Magnitude of Functions; APPENDIX; 1. Some Special Functions; 2. Remarks on the Differentiability of Functions; 3. Some Special Formulae; Chapter IV FURTHER DEVELOPMENT OF THE INTEGRAL CALCULUS; 1. Elementary Integrals; 2. The Method of Substitution; 3. Further Examples of the Substitution Method; 4. Integration by Parts; 5. Integration of Rational Functions; 6. Integration of Some Other Classes of Functions; 7. Remarks on Functions which are not Integrable in Terms of Elementary Functions; 8. Extension of the Concept of Integral. Improper Integrals APPENDIXThe Second Mean Value Theorem of the Integral Calculus; Chapter V APPLICATIONS; 1. Representation of Curves; 2. Applications to the Theory of Plane Curves; 3. Examples; 4. Some very Simple Problems in the Mechanics of a Particle; 6. Work; APPENDIX; 1. Properties of the Evolute; 2. Areas bounded by Closed Curves; Chapter VI TAYLOR'S THEOREM AND THE APPROXIMATE EXPRESSION OF FUNCTIONS BY POLYNOMIALS; 1. The Logarithm and the Inverse Tangent; 2. Taylor's Theorem; 3. Applications. Expansions of the Elementary Functions; 4. Geometrical Applications; APPENDIX
1. Example of a Function which cannot be expanded in a Taylor Series

Sommario/riassunto

"This is the perfect solid-as-they-come, timeless book on the calculus, and most likely it will never be surpassed in this domain." -Amazon ReviewThis book is intended for anyone who, having passed through an ordinary course of school mathematics, wishes to apply himself to the study of mathematics or its applications to science and engineering, no matter whether he is a student of a university or technical college, a teacher, or an engineer. Courant leads the way straight to useful knowledge, and aims at making the subject easier to grasp, not only by giving proofs step by step