mathematics. With the notion of area now at his disposal the author defines the radian measure of an angle in terms of the area of the sector rather than the arc length as is usually done. This procedure is quite logical since at this early stage the concept of arc length has not been introduced; the study of rectifiable curves and arc length does in fact come much later (Chapter 6) where it is treated rigorously. The trigonometric functions are introduced next in the usual geometrical manner. Chapter 1 concludes with the proof that piecewise monotonic functions on an interval are integrable, and with a discussion of upper and lower integrals. This may seem rather ambitious for a first introduction to integration. However, the elegant, interesting and detailed presentation should help to encourage the good student to make the effort necessary to grasp the important ideas presented in this first chapter.

The remaining portion of the book is more traditional.

Chapter 2, entitled "Differential Calculus", contains an unusually good discussion of limits and continuity, an honest proof of the chain rule and a sound treatment of differentials.

Chapter 3 studies logarithmic, exponential and inverse trigonometric functions. The logarithm is defined by the integral formula.

Chapter 4 introduces differential equations. Chapters 5 and 6 treat analytical geometry making use of vector algebra. After a study of curves and surfaces the concept of arc length is given a rigorous treatment in some starred sections.

Chapters 7 and 8 deal with the Mean Value Theorem and some of its consequences.

Finally Chapter 9 studies sequence series and improper integral.

Y. Cuttle, University of Saskatchewan

J. Blakey and M. Hutton Engineering Mathematics. Philosophical Library, New York, 1960. 603 pages. $10.00.

As stated in the preface, this book is intended to cover the mathematical requirements for a degree in Engineering at most Universities. The authors emphasize computational methods rather than mathematical rigour, and, as is the case with many English texts, each chapter is provided with carefully worked examples. In addition, there are 588 problems, many taken from London University examinations, together with answers.

Chapter headings are: 1. Revision. 2. Limits, convergency and divergency of series, exponential and hyperbolic functions, complex numbers. 3. Partial fractions and summation of series. 4. Differentiation. 5. Integration. 6. Expansion of functions in power series, maxima and minima, points of inflexion. 7. Tangents, normals, curvature, partial differentiation, etc. 8. Determinants. 9. Plane co-ordinate geometry--the straight line, circle, and parabola. 10. Conic sections--the ellipse and hyperbola. 11. Area under a curve, volume of revolution, etc. 12. First-order differential equations. 13. Second-order and partial differential equations. 14. Spherical trigonometry. 15. Moments of inertia and damped simple harmonic motion. 16. Numerical solution of equations. 17. Statistics. 18. Relaxation Methods. 19. Operational calculus--the Laplace transformation.

The general treatment is classical, and vector methods are not used. The book is well printed and bound.

A. Goldrich, McGill University

Daniel D. McCracken A Guide to Fortran Programming. John Wiley and Sons, New York - London, 1961. viii + 88 pages. $2.25.

The Fortran algebraic programming language is used for computers of more than one manufacturer, and despite its inherent defects is likely to be in use for some time, through simple inertia. There is generally no shortage of Fortran manuals for a particular machine, but these are designed as reference manuals (although a machine could not understand some of them). A text designed for teaching is therefore welcome. The author of this text takes the reader gently through the construction of simple statements, leaving the more involved constructions for later chapters.

The book describes the full Fortran language which is available only on some large machines, but adds a short appendix indicating the limitations applicable to each particular machine. The student should not place full reliance upon the accuracy of the appendix but should study the text in conjunction with the reference manual for his own machine.

There is an adequate set of problems at the end of each chapter and the last chapter is a set of eight case studies, illustrating the flexibility of the language. This is a useful text for teaching the Fortran language.

J. E. L. Peck, Calgary

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