Exercices d'algèbre et analyse, tome I, par G. Lefort. Dunod, Paris, 1968. xiv + 384 pages. Broché 34F., relié toile sous jaquette 42F.

Ce volume ouvre un éventail intéressant d'exercices. On y rencontre moins les problèmes habituels de routine dont le but est d'abord de rendre familières les définitions et les notions fondamentales et ensuite d'enseigner quelques enchaînements théoriques secondaires. On scrute plus loin: plusieurs exercices comportent une information additionnelle aux notions aux-quelles ils font appel, par exemple, une discussion des notions de base et de sous-espace d'un espace vectoriel montrera que des polynômes sur un corps s'y prêtent de diverses façons.

Ce recueil vise à une bonne maîtrise des matières abordées dans ses chapitres et semble très formateur, car l'étudiant qui fait tout l'effort personnel nécessaire, apprendra énormément et pourra s'améliorer et se corriger en se reportant aux solutions qui apparaissent plus loin.

On conviendra que cet ouvrage peut être d'une grande utilité pour les quelques premiers cours de base en algèbre, algèbre linéaire et analyse.

Norbert Lacroix, Université Laval

Mathematics for the liberal arts, by Morris Kline. Addison-Wesley, Reading, Mass., 1967. xiii + 577 pages.

This book has the same general purpose and pattern as Kline's earlier massive work, Mathematics: A Cultural Approach (1962). For the most part, the two books are practically the same. They differ in size mainly because four chapters in the earlier book, which were devoted entirely to cultural influences, have been omitted from Mathematics for the Liberal Arts. Also, in the more recent book, a set of well-chosen Review Exercises has been added to most chapters. Recommended reading lists given at the end of each chapter (almost identical in the two books) provide ample scope for ancillary studies or material for essay topics.

In the preface of the book under review, the author reaffirms his belief that a mathematics course for students in liberal arts should present the scientific and humanistic import of the subject, in a cultural context. The objectives of such a course are summarized in the first chapter as follows: "We should like to understand what mathematics is, how it functions, what it accomplishes for the world, and what it has to offer in itself. We hope to see that mathematics has content which serves the physical and social scientist, the philosopher, logician, and the artist; content which influences the doctrines of the statesman and the theologian; content which satisfies the curiosity of the man who surveys the heavens and the man who muses on the sweetness of musical sounds; and content which has undeniably, if sometimes imperceptibly, shaped the course of modern history. In brief, we shall try to see that mathematics is an integral part of the modern world, one of the strongest forces shaping its thoughts and actions, and a body of living thought inseparably connected with, dependent upon, and in turn valuable to all other branches of our culture. Perhaps we shall also see how by suffusing and influencing all thought it has set the intellectual temper of our times."

The ambitious and far-reaching objectives outlined in this quotation are approached from an historical and philosophical perspective, which serves to introduce many concepts of elementary mathematics, physics and other sciences. Some idea of the character and extent of the material may be gleaned

from the titles of the twenty-four chapters in the book.

Chapter 1. Why Mathematics?
Chapter 2. A Historical Orientation;
Chapter 3. Logic and Mathematics;
Chapter 4. Number: the Fundamental Concept;
Chapter 5. Algebra, the Higher Arithmetic;
Chapter 6. The Nature and Uses of Euclidean Geometry;
Chapter 7. Charting the Earth and the Heavens;
Chapter 8. The Mathematical Order of Nature;
Chapter 9. The Awakening of Europe;
Chapter 10. Mathematics and Paintings in the Renaissance;
Chapter 11. Projective Geometry;
Chapter 12. Coordinate Geometry;
Chapter 13. The Simplest Formulas in Action;
Chapter 14. Parametric Equations and Curvilinear Motion;
Chapter 15. The Application of Formulas to Gravitation;
Chapter 16. The Differential Calculus;
Chapter 17. The Integral Calculus;
Chapter 18. Trigonometric Functions and Oscillatory Motion;
Chapter 19. The Trigonometric Analysis of Musical Sounds;
Chapter 20. Non-Euclidean Geometries and their Significance;
Chapter 21. Arithmetics and their Algebras;
Chapter 22. The Statistical Approach to the Social and Biological Sciences;
Chapter 23. The Theory of Probability;
Chapter 24. The Nature and Values of Mathematics.

Kline, recognizing that this book contains more material than can be covered in some courses, indicates omissions that could be made without destroying logical continuity. These omissions, marked by asterisks, include the entire Chapters 9, 10, 16, 17, 19, 22 and 23 and specific sections in Chapters 4, 5, 6, 7, 12, 14 and 15.

The book is written in a style that is easy to read, technical points are carefully explained, and the illustrative diagrams are excellent.

In the opinion of this reviewer, Mathematics for the Liberal Arts merits a prominent place in every good library that serves not only the teaching profession, but the general public. With respect to its use as a textbook, teachers who disagree with the author's contention that mathematics proper makes little appeal and seems pointless to most liberal arts students, may prefer to focus more attention on set theory and other modern developments. Also, there may be teachers who are inclined to the view that much of the material is more appropriate for a natural science course than for a mathematics course. Nevertheless, the trend towards interdisciplinary and general education courses suggests that textbooks of this type may acquire more widespread use in the future.

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Almost-periodic functions, by C. Corduneanu. John Wiley and Sons, Inc., New York, 1969. x + 237 pages. U.S. $13.50.

This book on almost-periodic (a.p) functions and some of their applications covers certain topics which already appeared in book form (for example, in Levitan: Almost-periodic Functions, Moscow 1953), and also some more recent results which were available only in periodical mathematical journals. For example, Chapter I is quite similar to Levitan's.