portation, assignment, and bottleneck assignment problems), selected applications, parametric linear programming, discrete linear programming, stochastic linear programming, nonlinear programming and dynamic programming.

The book is clearly and carefully written; problems are given in most of the chapters. It would be quite suitable for use in a first course.

Hyman Kaufman, McGill University

The Real Projective Plane, by H. S. M. Coxeter. 2nd ed. Macmillan of Canada 1955, 1960. xii + 226 pages. $3.15.

Now available in paperback form, the book is a second edition, which, in addition to correcting several typographical errors, makes the following changes, as outlined in the Preface:

(i) Von Staudt's proof that $AA'BB' \barwedge A'AB'B$ (2.71) has been adapted to yield the quadrangular involution (4.71).

(ii) The first axiom of order has been weakened (3.11).

(iii) More satisfactory proofs have been given for Hesse's theorem (5.55), von Staudt's converse of Chasles's theorem (5.71), Archimedes axiom (10.22), and Enrique's fixed-point theorem (10.62).

(iv) Improved treatments of degenerate polarities (5.9), the inside and outside of a conic (6.32), Desargues's involution (6.72), the nine-point conic (6.81), the condition for a quadrangle to be convex with respect to a line (7.55), and Klein's Erlangen programme (8.10).

A review of the first edition of this book can be found in Math. Reviews 10 (1949) p.729.

F. A. Sherk, University of Toronto

Cours d'analyse de l'École Polytechnique, by J. Favard. Cahiers Scientifiques, Fasc. 26. Gauthier-Villars, Paris, 1960. Tome I, 675 pages, 90 NF; Tome II, v + 578 pages, 80 NF.

This work is to consist of three volumes: volume I, Introduction; Operations; Volume II, Representations; Analytic Functions, and Volume III (to appear), Equations. The chapter headings are as follows:

Volume I, Introduction (245 pages). I Elements of set theory;

II Elements of algebra (matrices, etc.); III Topological notions (metric spaces, dimension, curves, homotopy); IV Function spaces (continuous functions, Banach spaces); V Infinite series and products; VI Functions of bounded variation.

Operations (430 pages). I Derivatives and differentials; II Implicit functions, differential geometry; III Singular points, maximum and minimum; IV Jordan measure, Cauchy-Riemann integrals; V Different applications and extensions (interpolation, mechanical quadratures, Euler-Maclaurin formula, rectifiable arcs, surface area, Stieltjes integrals); VI Exterior differential calculus, vectors; VII Lebesgue integrals.

Volume II, Representations (178 pages). I Gamma Function; II Sequences of linear operators, theorem of Weierstrass, orthogonal series; III Fourier series and integrals, distributions.

Analytic functions (400 pages). I Basic definitions; II Cauchy's theorem and its corollaries; II Convergence, normal families, conformal mapping, Picard's theorem; IV Representation by power series, rational fractions, entire functions, the Laplace transform; V Elliptic functions; VI Analytic continuation, Riemann surfaces; VII Analytic functions of several variables; VIII Algebraic functions; IX Analytic functions with values in a Banach space.

This list shows the extreme richness of material in a textbook intended for the beginning students of the École Polytechnique (mathematicians, physicians, "creative technicians"). The author writes that his purpose is to teach principles, not recipes. Regarding Banach's "Théorie des opérations linéaires" to be the most important mathematical book between the two wars, he gives many applications of this theory. The scope of the classical Analysis is widened by considering functions with the argument or the values in a metric space, or a Banach space.

On his very high level, the author goes more for an encyclopaedic width of material, rather than for the depth. The result is a very readable book, which is warmly recommended to our students for independent study. From the many facets of Analysis, only the modern abstract approach and the combination of abstract algebra with Analysis are missing. The numerous exercises are of different degree of difficulty, but are always interesting.

G. G. Lorentz, University of Syracuse