

K. P. Grottemeyer: Analytische Geometrie, 2nd edition, Sammlung Göschen Bd. 65/65a. W. de Gruyter, Berlin, 1962. 218 pages. Price DM 5.80.

Here is a careful treatment of three-dimensional geometry which would serve as an excellent guide to anyone proposing to give an un-hackneyed course. The approach is a true vector approach; the coordinate system does not appear until Chapter II, having been preceded by an introduction to vectors in space and the algebra connected with them.

A large part of the book is devoted to transformations, not only the Orthogonal Transformations, but general Linear Transformations (Affine Mappings), Similarities, and Collineations and Correlations of Projective Geometry.

There is an exhaustive treatment of quadric surfaces, both in Euclidean and Projective space. The last chapter is a brief look at the notions which generalize the geometrical treatment of vectors in the earlier chapters, thus laying the groundwork for a smooth transition from Vector Geometry to abstract Linear Algebra.

F. A. Sherk, University of Toronto

Topics in Geometry, by Hazel Perfect. Pergamon Press, London, 1963. viii + 153 pages. \$2.95.

This is a very readable little book, presenting many classical topics in Euclidean geometry beyond the level of high school geometry and not usually taught in North American universities. Almost completely synthetic in approach, this book makes excellent background reading for students beginning their study of projective and non-Euclidean geometry.

The standard topics are covered, including: isometries of the plane, properties of triangles and circles, points at infinity, projections, inversion, properties of conics. The chapter on coaxal circles is especially interesting, since the author uses a rather unorthodox definition of a coaxal family: the section by a plane of a family of spheres all passing through one circle.

The only error noticed was on page 14, where we read: "A particular kind of geometry may be characterized by the kinds of properties studied in it or equally well by the group of transformations which preserve these properties (the transformations made up of translations, rotations and reflexions in the case of Euclidean geometry)."