

Tangents and normals receive discussion in a separate chapter, and the analytic geometry of space is treated in the two concluding chapters as a direct generalization of the developments for the plane.

The "Elements," while designed to meet the needs of the same class of students as the shorter book, constitutes a somewhat longer course, and is sufficiently rich in material to allow of considerable latitude of choice. A valuable chapter is added on equations in parametric form, also one on invariants of the quadric with respect to motions of the plane, one on euclidean transformations, one on inversion, one on poles and polars, including polar reciprocation, and the analytic geometry of space receives a much fuller treatment. The chapter on "Line and quadric" treats of tangent lines and planes, diametral and polar planes, and circumscribed and asymptotic cones.

The general appearance of the book is exceedingly attractive. A variety of styles of type has been skillfully used to make clear the different characters of various parts of the text, as theorem, proof, rule, and example. The figures are excellent, clear and distinct, and mention should be made of the half-tones of models of quadric surfaces toward the end of the books, which will do a great deal in helping the student to a correct idea of these surfaces.

No estimate of a book can be quite satisfactory without a basis of class-room experience; but these two books certainly merit a trial, especially in institutions where the needs of the students are similar to those at Yale University.

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PRINCETON, N. J.,  
July 25, 1905.

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## NOTES.

THE German mathematical society held its annual meeting, in affiliation with the association of German scientists and physicians, at Meran, Tyrol, September 24–30. Twenty-seven titles were announced on the preliminary programme, including reports "On the introduction of the calculus in the gymnasia," by Professor E. CZUBER; "On partial differential equations of physics," by Professor W. WIEN; "New investigations of Riemann's  $\zeta$ -functions," by Dr. P. EPSTEIN; "The status of