A second chapter of equal size is taken up with discoveries in the plane, and a 124-page final chapter carries the subject into 3-space and higher dimensions. Up to the end of the solution of Hilbert's problem, the discussion is generally easy-going and elementary. Beyond this point, the arguments soon become longer, more complicated and sophisticated (from p. 130). While the author continues to explain everything in full detail, this part of the book demands much more drive and concentration and is clearly an object for serious study. However, the motivated reader will not go unrewarded. He will discover another instance of the unity of mathematics in the way several branches of abstract mathematics converge to solve a problem of the most concrete kind. For example, the 20-page proof of the Dehn-Sydler theorem is highly algebraic and draws not only from the now standard vector methods of modern geometry (Minkowski sums) but uses techniques and results from functional equations, group and ring theory, set theory, and linear algebra. As often observed in many quarters, it is impressive what mathematics can do when it pulls itself together.

Later topics include an extension of a few of the results to spaces of higher dimension, notably 4 dimensions, and a brief discussion of connections with the modern subject known as the algebra of polyhedra. Although the volume constitutes a self-contained account of a topic which is now essentially complete, it concludes with a short list of unresolved questions.

There are a few misprints, but few mistakes that the reader will not see through in a matter of moments.

The subject is related to a surprising discovery made recently by Robert Connelly (Cornell University), who is working in this general area at the present time. In 1813, Cauchy proved that a convex polyhedron with rigid faces is itself a rigid solid, that is, even if it were hinged along every edge, its shape could not be altered without forcibly breaking the surface. Connelly produced a nonconvex rigid-faced polyhedron which, if considered to be hinged at its edges, can be moved continuously through a small range of shapes without distortion of any face. For a description of this polyhedron and instructions for constructing a model, see Robert Connelly, *A flexible sphere*, The Mathematical Intelligencer (Springer-Verlag), volume 1, number 3, 1978.

The interested reader might also be on the lookout for a forthcoming book by Irving Kaplansky on all 23 of Hilbert's Paris problems.

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BULLETIN (New Series) OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 1, Number 4, July 1979

0002-9904/79/0000-0307/$02.00

Mechanizing hypothesis formation. Mathematical foundations for a general theory, by P. Hájek and T. Havránek, Universitext, Springer-Verlag, Berlin-Heidelberg-New York, 1978, xv + 396 pp., $24.00.

I know of no book on statistics that has "Hypothesis formulation" in its index; nor is it in the indexes of Ralston and Meek [17], Mathematical Society of Japan [13], Polanyi [15], Winston [20], nor Boden [1]. But some-