$$P_\nu(x): \nu = -0.5(0.02)0.5, x = -1.0(0.01)1.0; 7\text{D},$$

$$P_\nu(x): \nu = -0.5(0.1)8.5, x = -1.0(0.02)1.0; 7\text{D},$$

$$x_j, y_j, P_\nu'(x_j), P_\nu(y_j), \nu = 0.1(0.1)8.5, 7\text{D}.$$

The values y_j are called bend points. Some related tables are (1) Gray, M. C., "Legendre functions of fractional order," *Quart. Appl. Math.*, v. 11, 1953, pp. 311–318, also *MTAC*, v. 8, 1954, p. 24; (2) Ben Daniel, D. J. and Carr, W. E., *Tables of Solutions of Legendre's Equation for Indices of Nonintegral Order*, University of California Lawrence Radiation Laboratory, Livermore, UCRL-5859, September, 1960 (or from Office of Technical Services, Wash., D. C.). See also *Math. Comp.*, v. 16, 1962, pp. 117–119; (3) Abramowitz, A. & Stegun, I. A., Editors, *Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables*, AMS No. 55, U. S. Government Printing Office, 1964. See Chapter 8 and references given there. See also *Math. Comp.*, v. 19, 1965, pp. 147–149.

Y. L. L.

69[9].—Francis L. Miksa, *Table of Primitive Pythagorean Triangles, Arranged According to Increasing Areas*, ms. in five volumes comprising a total of 27 + 980 typewritten pp. (consecutively numbered), deposited in the UMT file.

The main table of this voluminous unpublished work gives in 980 pages the generators, sides, and areas of the 52,490 primitive Pythagorean triangles whose areas do not exceed 10^{10}, arranged according to increasing areas.

Running counts of these triangles are given for each page, and such counts are separately tabulated for areas less than 10^k at intervals of 10^{k-1}, for $k = 7(1)10$. The author develops a formula that provides an independent check on these counts.

A preliminary section (dated May 21, 1952) contains a listing of the sides and areas of all primitive Pythagorean triangles having equal areas less than 10^{10}. Included are 158 pairs and a single triple of such triangles. All equiareal triangles therein that are generated by a special formula attributed to Fermat are so indicated. Appended to this table is a list of the generators and sides of primitive triangles whose areas consist of the digits 1(1)9 or 0(1)9 appearing just once.

A foreword (dated November 11, 1961) to the main table presents the details of the underlying calculations, performed with the assistance of a 10-column desk calculator.

This elaborate census of primitive Pythagorean triangles according to areas may be considered as a companion to the manuscript tables of Anema [1] and the author [2] listing these triangles according to increasing perimeters.

It seemed appropriate here also to refer to recent pertinent computations by Jones [3] and Beiler [4] and to a book of the latter [5], wherein one finds many additional references.

J. W. W.

1. A. S. Anema, *Primitive Pythagorean Triangles with their Generators and their Perimeters, up to 119 992*, ms. in the UMT file. (See *MTAC*, v. 5, 1951, p. 28, UMT **111**.)

2. F. L. Miksa, *Table of Primitive Pythagorean Triangles with their Perimeters Arranged in Ascending Order from 119 992 to 499 998*, ms. in the UMT file. (See *MTAC*, v. 5, 1951, p. 232, UMT **133**.)

3. M. F. JONES, *Isoperimetric Right-Triangles,* Memorial University of Newfoundland, St. John's, Newfoundland, Canada, April 1967. (See *Math. Comp.*, v. 22, 1968, pp. 233–234, RMT **21.**)
4. ALBERT H. BEILER, *Consecutive Hypotenuses of Pythagorean Triangles,* ms. in the UMT file. (See *Math. Comp.*, v. 22, 1968, pp. 690–691, RMT **74.**)
5. ALBERT H. BEILER, *Recreations in the Theory of Numbers,* Dover, New York, 1964, Chapter XIV.

70[14].—COSRIMS, *The Mathematical Sciences: A Report,* National Academy of Sciences, Washington, D. C., 1968, xiv + 256 pp., 23 cm. Price $6.00.

A series of reports on major areas of science have been prepared and issued under the aegis of the Committee on Science and Public Policy of the National Academy of Sciences. COSRIMS, under the chairmanship of Lipman Bers, was responsible for the mathematical sciences (see the other reviews). This report sets forth their conclusions with respect to mathematical research in the U. S., its character, its importance, the current extent and sources of its support, and its needs. Some little space is devoted to an attempt to explain, in language understandable to the layman, what mathematics is all about, and how and where it is applied.

"Remarkably enough, it is impossible to predict which parts of mathematics will turn out to be important in other fields." This statement appears on page 8, and the theme recurs. "Cayley . . . believed that matrices, which he invented, would never be applied to anything useful (and was happy about it)" (page 49). "How fast ought society to expect the results of innovation to be transferred?" (page 215). However, the last half-page is entitled "The Nonutilitarian View."

The first chapter is entitled "Summary," and includes the "Recommendations." "The State of the Mathematical Sciences" attempts to describe in simple terms "Core Mathematics" and to illustrate applications. The third chapter takes up mathematical education, and the fourth, "Level and Forms of Support."

Altogether this is an impressive and authoritative statement of the place of mathematics in contemporary society.

A. S. H.

71[14].—COSRIMS, *The Mathematical Sciences: Undergraduate Education,* National Academy of Sciences, Washington, D. C., 1968, ix + 113 pp., 23 cm. Price $4.25.

COSRIMS, the Committee on Support of Research in the Mathematical Sciences, as one phase of its activities undertook to investigate the state of undergraduate education in mathematics. This is the report of the Panel on Undergraduate Education in Mathematics, made up of eleven members with John G. Kemeny as chairman. One member of the Panel, Henry Pollak, was from industry, all others from colleges and universities.

The general picture that develops can hardly come as a surprise to any mathematician, whether academic or industrial, pure or applied, but the documentation, and the array of facts and figures, is impressive. Over the past ten years the percentage of undergraduate students majoring in mathematics has increased from 1.5 to 4.0. Meanwhile the level of offerings has gone up in ways that are not easy to measure in quantitative terms. However, the "case histories" of eight colleges and universities over the past quarter century vividly illustrate these and other changes that have taken place.