

The April Meeting of the Metropolitan New York Section



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THE APRIL MEETING OF THE METROPOLITAN NEW YORK SECTION

The sixteenth annual meeting of the Metropolitan New York Section of the Mathematical Association of America was held at Hunter College, New York City, April 27, 1957. Dean Mina Rees of Hunter College, Chairman of the Section, opened the meeting and presided at the morning session which was devoted to papers on some mathematical developments related to computer applications. Dr. Irving Dodes, High School Vice-Chairman of the Section, was moderator for the afternoon session which was devoted to papers on curriculum trends in high school and college mathematics. There were 122 persons in attendance, including 94 members of the Association.

The following officers were elected for the years 1957-59: Chairman, Professor J. N. Eastham, Cooper Union; Vice-Chairman for Colleges, Professor E. R. Stabler, Hofstra College; Vice-Chairman for High Schools, Dr. Reinhold Walter, Manhattan School of Aviation Trades; Secretary, Dr. Azelle B. Waltcher, Hofstra College; Treasurer, Mr. Aaron Shapiro, Midwood High School, Brooklyn.

At the business meeting reports were given by the Treasurer, the Committee on Contests and Awards, and the Committee on Coordination of Mathematics Training. The motion was unanimously passed that the Treasurer of the Section, Mr. Aaron Shapiro, receive an expression of appreciation and gratitude for his service to the Section.

At the Executive Committee Meeting of the Metropolitan New York Section in November, 1956 a resolution was adopted concerning the willingness of the Committee on Contests and Awards to work with the National Contest Committee. As a result of this action, the Committee on Contests and Awards brought to the annual meeting the following resolution, which was unanimously adopted:

Whereas, the Mathematical Association of America has set up a National Committee on Contests, and

Whereas, the Committee on Contests and Awards of the Metropolitan New York Section has been conducting annual contests since 1949, and

Whereas, the contest booklets and experience of the Metropolitan New York Section have been used, and are being used, by the Contest units in eight or nine states and provinces,

Therefore, be it resolved that the Metropolitan New York Section offers the services of its Committee on Contests and Awards to the National Committee in the promotion of the objectives of the annual high school contest.

The By-Laws of the Section were amended by unanimous vote to provide for two-year terms of office for the Section officers.

The Committee on Coordination of Mathematics Training of the Metropolitan New York Section formulated three resolutions which received the approval of the Executive Committee at the November 1956 meeting. The resolutions, which follow, were adopted by the Section at the annual meeting.

1. The Metropolitan New York Section of the M.A.A. recommends to all high school students who plan to study calculus in college that they should have at least three years of high school mathematics, and the Section recommends to all high school advisors that they strongly advise this course of study.

2. The Metropolitan New York Section of the M.A.A. recommends to the colleges that three years of high school mathematics be required as a minimum for all college entrants intending to study the calculus, and that high school mathematics through advanced algebra be required as a minimum for all college entrants planning courses of study in mathematics, science, or engineering.

3. The Metropolitan New York Section of the M.A.A. recommends to the high schools that prospective college entrants be separated from other students in high school mathematics classes wherever feasible, and that the respective teaching methods and course contents be chosen in accordance with the objectives for each group of students.

It was moved and unanimously carried that the Metropolitan New York Section go on record as approving the sentiments expressed in a telegram sent by Dean Mina Rees to Chancellor John P. Myers, New York State Board of Regents. The telegram stated in effect the opinion that an increase in the course requirements in professional education courses without consideration of the adequacy of subject matter preparation would weaken the preparation of teachers, and would influence adversely serious efforts of educational leaders to improve the quality of instruction. The opinion was also expressed in this telegram, that faculty leaders outside of professional education circles should be called upon to participate in decisions which affected the course requirements in the preparation of teachers.

The following papers were presented at the meeting:

1. *The UNIVAC election forecasts*, by Dr. M. A. Woodbury, College of Engineering, New York University.

The mathematical and statistical problems involved in applying probability models to forecasting the 1952, 1954, and 1956 elections using an electronic computer are discussed. The problems of data selection and rejection, transformation into appropriate form, inferences, and decisions based on the probability model are set forth.

2. *Linear programming*, by Dr. Philip Wolfe, Princeton University.

An example of a production scheduling problem is taken as typical of the management problems formulable in the linear programming model. Procedures for converting such problems into computationally accessible problems are illustrated by means of the example. The theory of positive linear dependence is sketched and applied to the linear programming problem, and used to motivate the computational algorithm of the simplex method.

3. *New trends in the undergraduate college mathematics curriculum*, by Dr. Seymour Schuster, Polytechnic Institute of Brooklyn.

The traditional college curriculum in mathematics is briefly analyzed with regard to its present shortcomings. Particular emphasis is given to the failure of the traditional program to serve the principles of liberal education, which require fluency in language and mathematics. The apparent trends which seek revision of the curriculum are described through a consideration of the efforts of the M.A.A. Committee on the Undergraduate Mathematical Program and the many faculties which are experimenting with their respective curricula. The influence of several of the modern texts is discussed through a brief analysis of each. Finally, hope is extended for a trend which would

manifest itself in a concerted effort (with all departments joining forces) to assume responsibilities to the discipline of language, as well as mathematics—since communication depends on both.

4. *Preparing the bright student in twelfth year high school mathematics*, by Mr. H. D. Ruderman, The Bronx High School of Science.

Students preparing for the Advanced Standing Examination in Mathematics must take analytic geometry and calculus. For those not taking the Examination, the following five criteria might be considered as a basis for selection of the course. The mathematics for the course should: 1) emphasize ideas having wide and important applications, 2) contain a good sampling of significant mathematical ideas, 3) aim at a better understanding of the foundations of mathematics, 4) be learnable without undue hardship but rather with considerable interest and excitement on the part of the student, 5) be teachable by the best prepared teachers in every high school, again without undue hardship but rather with interest and enthusiasm. At The Bronx High School of Science there is a course that meets these conditions. The first half consists of advanced algebra with a large portion of differential calculus limited to algebraic functions. The second half follows closely chapters 1 to 6 and 12 of "Principles of Mathematics" by Allendoerfer and Oakley published by McGraw-Hill.

AZELLE B. WALTCHER, *Secretary*

THE APRIL MEETING OF THE MISSOURI SECTION

The annual meeting of the Missouri Section of the Mathematical Association of America was held on April 27, 1957, at Southeast Missouri State College, Cape Girardeau, in conjunction with a meeting of the Missouri Council of Teachers of Mathematics. Professor W. R. Utz, Vice-Chairman of the Section, presided at the morning session of the Section. Professor R. J. Michel, Chairman of the Section, presided at the business meeting and the joint afternoon session. There were 54 members in attendance.

The following officers were elected: Chairman, Professor H. D. Brunk, University of Missouri; Vice-Chairman, Professor J. D. Elder, St. Louis University; Secretary-Treasurer, Miss Mary L. Cummings, University of Missouri.

The following papers were presented:

1. *Some Roman mathematics*, by Professor J. F. Daly, St. Louis University.

From an unpublished manuscript of an unknown author of the late twelfth or early thirteenth century an account is given of how a Roman could find the sum of an arithmetic progression of consecutive numbers and of consecutive even numbers. Also included are the six rules whereby Roman numerals can be multiplied. These rules for multiplication demand the use of an abacus, which is likewise furnished in the text.

2. *The Lebesgue integral for sophomores*, by Professor H. M. MacNeille, Washington University.

The possibility of defining the definite integral in the initial calculus course in a manner that will lead to the Lebesgue rather than the Riemann integral is discussed.

3. *Two-fold generalization of Cauchy's lemma*, by Professor D. E. Coffey, Missouri School of Mines and Metallurgy.

There exist integral solutions x_i of equations

$$x_1^2 + x_2^2 + x_3^2 + x_4^2 = a, \quad x_1 + x_2 + x_3 + x_4 = b,$$

if and only if $a \equiv b \pmod{2}$ and $4a - b^2$ is a sum of 3 squares. If $b \geq 4(1-k)$ and if $b^2 + 2bk + 4k^2 > 3a$, each $x_i > -k$.

4. *A unique construction*, by Mr. H. J. Johnson, Engineer, American Telephone and Telegraph Company, St. Louis.