MATHEMATICS

Chairman: JUNA L. BEAL, Butler University

The MATHEMATICS SECTION met with the Indiana Section, MATHEMATICAL ASSOCIATION OF AMERICA.

Professor H. E. Wolfe, Indiana University, was elected chairman of the Section for 1946.

Statistical methods for controlling the quality of industrial products. IRVING W. BURR, Purdue University.—Since industrial inspection data are statistical in nature, it is only to be expected that they may best be analyzed by statistical methods. The following tools are especially useful: frequency distributions, control charts, correlation and the laws of probability. It is the purpose of this paper to briefly show how these tools are used in practical applications, to suggest this field as a new and attractive career, and to point out that there are many unsolved problems.

Symmetry in metric spaces. PAUL M. PEPPER, University of Notre Dame.—In an abstract metric space S a point c is called a *center of pointwise-symmetry* if for each x in S there exists a point y(x) such that the distance xc equals the distance cy(x) and one-half the distance xy(x). *If* S *has at least* 2 *centers of pointwise-symmetry, then* S *is unbounded.* A point c of S is called a *center of* η*-symmetry* (fractional symmetry) if $0 < \eta \leqslant 1$ and for each x in S there exists a point y(x) for which $xc = cy(x)$ and $xy(x) \geqslant 2\eta xc$. *For each positive* η *less than* 1 *there exist bounded metric spaces of arbitrarily small diameter with* 2 *centers of* η*-symmetry.* (Examples related to the Chebychef polynomials of second kind are shown for each η less than 1.) A point c of S is called a *center of pointwise-open-symmetry* if for each number $\eta > 0$ and each x in S there exists a point $y(\eta,x)$ such that $xy(\eta,x) \geqslant 2xc - \eta$ and $|cy(\eta,x) - xc| \leqslant \eta$. *If* S *has at least* 2 *centers of pointwise-open-symmetry, then* S *is unbounded.*