6. *Conclusion.* This method of analysis of straight-line nets by the contiguous segments, as herein extended to all the lines in the system, regardless of their relation to a pentagon, hexagon, or other basal polygon, is applicable to any number n of straight lines and is even not restricted to the case that only $m=2$ lines shall pass through a point. The method furnishes a *necessary and sufficient* test for the equivalence or the non-equivalence of two systems of straight lines, and in the case of two equivalent systems this method simplifies the discovery of the substitution which transforms the one system into the other system.

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A PRACTICAL METHOD FOR THE MODULAR REPRESENTATION OF FINITE OPERATIONS AND RELATIONS*

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1. *Introduction.* In previous papers one of the writers developed a general theory for the concrete representation of arbitrary operations and relations in a finite class of elements.† Let p be a prime, and let a mod p denote the least positive integer obtained from integer a by dropping multiples of p. Consider the function $f(x)$ given by

$$f(x) = c_0 + c_1x + \cdots + c_{p-1}x^{p-1}, \qquad \text{mod } p, \tag{1}$$

where x ranges over the complete system of p-residues $0, 1, \cdots, p-1$, and where the coefficients c_i are among the p-residues. The general theory is based on the fact that any unary operation in a class K of p elements, the operation satisfying the condition of closure, can be represented by a polynomial of form (1). But when the number of elements in K is large, the calculation of (1) by the method of the general theory is very laborious, for the work involves, for a class of p elements, the computation modulo p of p determinants each of order $p-1$. For an m-ary operation or an m-adic relation where $m>2$, the calculation of the representation by the method of the general theory is very laborious

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† See the Proceedings of the International Mathematical Congress, Toronto, 1924, p. 207, and this Bulletin, vol. 32, p. 533.