$$(18) \qquad R'_{n-p_1} = 0, \qquad R'_{n-p_2} = 0, \qquad \cdots, \qquad R'_{n-p_k} = 0$$

for an arbitrary original polygon P. Further, no other relations $R'_{n-p}=0$ ($p \neq p_1$ or $p_2 \cdots$ or p_k) are satisfied by P' if P remains general (P' has no higher than the kth degree of regularity). This is also seen from (16′), where $\phi(\omega^p) \neq 0$, $R_{n-p} \neq 0$ (since P is general); therefore $R'_{n-p} \neq 0$.

In fact, no relations of any kind besides (18) are satisfied by $P' = MP$ if P remains general. This is because, by the general theory of systems of linear equations, it can be readily shown that if the conditions (17) are satisfied by the coefficients α in (2), then the conditions (18) are sufficient as well as necessary in order that (2) be solvable for the z's in terms of the z''s. This is to say that for *any* polygon P' obeying (18) a polygon P can be found such that $P' = MP$; indeed, the class of such polygons P depends linearly on k complex parameters.

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AXIOMS FOR MOORE SPACES AND METRIC SPACES[1]

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We shall consider a set of five axioms in terms of the undefined notions of *point* and *region*. It will be shown that these axioms are independent and that they constitute a set of conditions necessary and sufficient for a space to be a complete metric space. It will also be shown that certain subsets of this set of axioms constitute necessary and sufficient conditions for a space to be (1) a metric space, (2) a Moore space, (3) a complete Moore space. Axiom 2 and a more general form of Axiom 1 have been stated by the author in an earlier paper [**1**]. Following terminology of F. B. Jones [**2**], a space is said to be a *Moore space* provided conditions (1), (2), and (3) of Axiom 1 (that is, Axiom 1_0) of R. L. Moore's *Foundations of Point Set Theory* [**3**] are satisfied. A space is said to be a *complete Moore space* provided it satisfies all the conditions of that axiom. Wherever the notion of region is employed, whether as a defined or an undefined notion, it is understood that a necessary and sufficient condition that a point P be a limit point of a point set M is that every region containing P contain a point of M distinct from P. The letter S is used to denote the set of all points.

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