$k+2$, $k+1$, or k such G's. The number is $k+2$ when there is more than one invariant of each of values 2 and 4 in H. When there is only one invariant of one of these values and more than one of the other, the number of G's is $k+1$. Finally, there are only k such G's when H contains only one invariant of each of the values 2 and 4.

It may be added that in the study of all the possible non-abelian groups of order p^m which contain an abelian subgroup of order p^{m-1} it is especially desirable to know all of those groups which contain more than one such subgroup, as the other possible groups are distinct whenever they transform the abelian subgroup in different ways. When there is more than one abelian subgroup of order p^{m-1} in G, two such subgroups may be transformed differently by the remaining operators.

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NOTE ON SYSTEMS OF IN- AND CIRCUMSCRIBED POLYGONS.

BY MISS S. F. RICHARDSON.

(Read before the American Mathematical Society, October 27, 1906.)

IN a paper read before the London Mathematical Society on March 12, 1874 (*Proceedings of the London Mathematical Society*, volume 5) Wolstenholme assumes two similar and similarly situated polygons of n sides, $ABC \cdots KLM$ and $abc \cdots klm$, and considers the conditions for an infinity of polygons which shall be inscribed in one of the similar polygons and circumscribed about the other.

He assumes that if ab meet AM in U and if am meet AB in V, then

$$AU/AM = AV/AB = k.$$

His solution finds $n-1$ values for k, that is, that there are $n-1$ points on AM, say, which may be taken as its intersection with ab, this point fully determining the polygon $abc \cdots klm$.

In particular he finds as the two solutions for the case $n=3$ that ab must divide AC in the ratio $\frac{1}{3}$ or in the ratio 1. In the first case the triangle abc becomes a point, the common