IV, we find that there is a unique solution of equations (*b*) subject to the condition that z is integral. We thus conclude:

In order that p^2 $(p \neq 3)$ *shall be representable in the form* $g(x, y, z)$, *with the condition* $x + y + z = p$, *it is necessary and sufficient that* p *be of the form* $6n + 1$ *and this representation, when it exists, is unique.*

In case (*c*) the second equation has the obvious solution $u = v = p$. This solution will yield integral z only when p has the form $3k + 2$. The solution is unique for such p since it follows from the theory of binary quadratic forms that such a prime power p^2 can be represented in the form $u^2 - uv + v^2$ only when $u = v = p$ or $u = p, v = 0$, the latter solution giving z non-integral in the present case. If p is of the form $3k + 1$ then the second equation in (*c*) has the solution $u = p$, $v = 0$; this gives rise to integral z and hence to a representation of the kind sought. The representation in this case is not necessarily unique, since the second equation in (*c*) may have a second solution giving rise to integral z. We have the following result:

The prime power p^2 $(p \neq 3)$ *can be represented in the form* $g(x, y, z)$ *subject to the condition* $x + y + z = 1$.

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ON THE LINEAR CONTINUUM.

BY DR. ROBERT L. MOORE.

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§ 1. *Introduction.*

IN the *Annals of Mathematics,* volume 16 (1915), pages 123–133, I proposed a set G of eight axioms for the linear continuum in terms of *point* and *limit*. Betweenness was defined,* and it was stated that the set G is categorical with respect to *point* and *the thus defined betweenness*.† In the present paper it is shown that, although this statement is true, nevertheless

* See Definition 3, loc. cit., p. 125.

† This statement, which is proved in the present paper, implies that if K is any statement in terms of point and betweenness, then either it follows from Axioms 1–8 and Definition 3 that K is true or it follows from Axioms 1–8 and Definition 3 that K is false.