of a homeomorphism in the sense of Antoine.\textsuperscript{*} From Theorem 2, p. 394, of the paper just cited, we can obtain a theorem for A-extending a homeomorphism between two subsets of spheres.

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A PROPERTY OF THE SOLUTIONS OF $p^2 - du^2 = 4$

BY GORDON PALL

Let $p$ be any odd prime not dividing $d$. The integral solutions $t_i, u_i, \ (i = 0, \pm 1, \cdots)$, of $p^2 - du^2 = 4$ have the following property.

THEOREM. Let $m+n=r+s$. Let $v$ stand for $t$ or $u$. Then

$$v_m + v_n \equiv v_r + v_s \pmod{p}$$

if and only if the terms are congruent in pairs;\textsuperscript{†} the same holds for each of

$$v_m - v_n \equiv v_r - v_s, \quad v_m + v_n \equiv -(v_r + v_s), \quad v_m - v_n \equiv -(v_r - v_s).$$

For if $m+n$ is even and $v = u$, we can write $m = h+i$, $n = h-i$, $r = h+j$, $s = h-j$, whence

$$u_m + u_n = u_h l_i, \quad u_r + u_s = u_h l_j;$$

if $u_h = 0$, then $u_m \equiv -u_n$; if $l_i \equiv l_j$, known conditions for two $u$'s or $t$'s to be congruent show that $u_m = u_r$ or $u_s$. The remaining cases are similar. If $m+n$ is odd, we transpose terms, and find with a little attention to parities ($u_i = -u_{-i}, \ t_i = t_{-i}$) one or other of the former cases.

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\dagger For notations see, for example, Pall, Transactions of this Society, vol. 35 (1933), p. 501.

\ddagger That is, $v_m = -v_n, v_r, \text{ or } v_s$. 