574-5. Donald Monk: Nonrepresentable polyadic algebras of finite degree.

Leon Henkin has constructed a nonrepresentable three dimensional cylindric algebra (Henkin, La structure algébrique des théories mathématiques, pp. 37-39) and subsequently generalized the construction to any finite dimension ≥ 3. There is a natural way of defining substitution operators $S(\tau)$ on Henkin's examples, and it is then just a (somewhat lengthy) computation to show that a polyadic equality algebra is obtained. Call a polyadic algebra A representable if it is isomorphic to a sub-direct product of 0-valued functional polyadic algebras. There are equations not involving equality which hold in all representable polyadic algebras but not in Henkin's examples. We conclude: Theorem. There are nonrepresentable polyadic algebras of each finite degree ≥ 3. (Received September 26, 1960.)

574-6. Donald Monk: Polyadic Heyting algebras.

Heyting algebras are understood in the sense of Rasiowa-Sikorski, Fund. Math. vol. 40, pp. 62ff. A quantifier on a Heyting algebra is understood in the sense of Halmos, Compositio Math. vol. 12, pp. 217ff, with "Boole" replaced by "Heyting". Making the same replacement in Halmos, Fund. Math. vol. 43, pp. 255ff, we arrive at the notion of a functional polyadic Heyting algebra and a polyadic Heyting algebra, and we take over the definition of a support of an element of the algebra. A polyadic Heyting algebra A is $\mathfrak{m}$-small (where $\mathfrak{m}$ is a cardinal number) if every element of A has a support of cardinality $< \mathfrak{m}$. The local dimension of the algebra A is the least cardinal $\mathfrak{m}$ such that A is $\mathfrak{m}$-small. Theorem. Every polyadic Heyting algebra of infinite degree is isomorphic to a functional polyadic Heyting algebra whose domain has any specified power $\geq$ max (degree, local dimension). (Received September 26, 1960.)

574-7. T. G. Ostrom: Concerning the little projective group.

Let G be the projective group of collineations in the plane coordinatised by the field F, and let H be the little projective group over F. Let M be the multiplicative group in F, and let M' be the subgroup of M consisting of the cubes in M. Theorem (a) if M' = M, then G = H (b) If M' is of index 3 in M, then H is of index 1 or 3 in G. Summary of the proof: Using nonhomogeneous coordinates, let R(a) and S(a) denote the elations $(x,y) \rightarrow (x, xa + y)$ and (x,y)