(where the superscript is reduced, modulo n_i, if necessary) be a homeomorphism agreeing with T on L and sending b_i^j into b_i^{j+1} (with the same convention on the superscripts). This defines T for every p of M. It is evident that $T(M)=M$ is a pointwise periodic homeomorphism.

If we now define

$$G_i = \sum_{j=1}^{n_i} b_i^j,$$

we see that each G_i is an orbit under T, and conditions (a) and (b) of the theorem are satisfied. The proof is thus complete.

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AN ENUMERATION OF LOGICAL FUNCTIONS

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In a logical calculus of m values, abbreviated by L_m, we may deal with functions of n variables. A particular function is defined in this calculus if we assign a constant value, which may be any arbitrary one of the m possible values in L_m, as the value of that function for a particular argument. It is the purpose of this note to enumerate, among all functions of n variables in L_m: those which depend on all n variables in the argument; those which depend on just $(n-1)$ of the variables in the argument, being independent of one of them; and so on; finally those which are completely independent of all the variables in the argument.

Since each variable in the argument may assume values from $1, \cdots, m$, independently, there are m^n possible arguments, and since to each argument we may assign independently, as a functional value, any of the m values $1, \cdots, m$, there are in all m^{m^n} possible functions of n variables.

Let V_n be the total number of all functions of n variables in L_m. Then we have from the above

$$V_n = m^{m^n}. \tag{1}$$

Let U_{nk} be the number of functions of n variables which depend on exactly k of them. (It is this expression for which we are seeking an explicit evaluation.) Since k variables may be selected from n of them in just $C_{n,k}$ ways, we have the relation:

$$U_{nk} = C_{n,k}U_{kk}. \tag{2}$$