1096-05-923 **Alfred W Hales*** (`hales@ccrwest.org`), Center for Communications Research, 4320 Westerra Court, San Diego, CA 92121. *Two Problems: Generation and Presentation.*

Consider the set D = D_n of all de Bruijn sequences of length 2^n, where we distinguish between cyclic rotations of a sequence. Then D_n has cardinality $2^{2^{(n-1)}}$.

Problem 1: Find an efficient explicit bijection between D_n and the set of all $2^{(n-1)}$ long binary sequences, one requiring minimal computation time and memory.

Problem 2: Suppose S is a subset of D_n. Determine the structure of the group generated by elements x,y with one relation for each sequence s in S - where the relation corresponding to a sequence s comes from replacing each 0 in s by x and each 1 by y.

For S = D_n we know the answer by a result of Rosenberg. We are particularly interested in the case where S is the set of sequences obtained from maximal length shift register sequences by inserting an extra 0. (Received September 11, 2013)