
IAN WANLESS, Monash University, Australia

Omniversal Latin squares

A partial transversal of a Latin square is a set of entries in which no row, column or symbol is repeated. It is maximal if it is not contained in a larger partial transversal. A Latin square of order n is omniversal if it possesses a maximal partial transversal of every size from $\lceil \frac{n}{2} \rceil$ to n . We show that omniversal Latin squares exist iff $n \not\equiv 2 \pmod{4}$ and $n \notin \{3, 4\}$. We also show that group tables are very far from omniversal (as are random Latin squares). In the process we encounter an interesting problem in combinatorial group theory.