

Automaticity and Self-similarity of Some Classical Number Tables
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The number tables of Binomial/Multinomial coefficient, Stirling numbers, coefficients of orthogonal polynomials(Chebishev, Legendre) reduced modulo m exhibit interesting self-similar structure. It is related to the divisibility properties of these number tables. The best way to see it is a geometrical representation of these tables. The arithmetical/algebraic explanation of this self similar structure is given by the automaticity properties of the number tables reduced modulo m . The main result is that they are p -automatic iff p is a prime number and m is a power of p , i.e. only in this case the number table modulo m is generated by 2- D finite automaton with impute $\{0, 1, \dots, p - 1\}^2$. The geometrical counterpart of this assertion is that the geometrical representation of these sequences is generated by a uniform matrix substitution.