

ON THE LAST NONZERO DIGIT OF $n!$

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Let $\ell_b(n!)$ be the last nonzero digit in the base- b expansion of $n!$. We will determine for which bases b the sequence $\{\ell_b(n!)\}_{n \geq 0}$ is automatic, i.e., its terms can be computed by a finite-state machine reading the digits of n . Using this description we will compute how often (in the asymptotic sense) $\ell_b(n!)$ takes on each value $1, 2, \dots, b-1$. Similar results have already been obtained for $b = 4$ (Deshouillers, Luca) and $b = 12$ (Deshouillers, Ruzsa).