

io-port 05797878**Smith, Simon M.****Subdegree growth rates of infinite primitive permutation groups.**

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Consider a transitive permutation group G on an infinite set Ω . An orbital of G is an orbit of G acting on $\Omega \times \Omega$ in the natural manner. To each orbital Δ there is an orbital digraph Γ with Ω as the set of vertices and Δ as the set of arcs. Because G is transitive, Γ is regular, and the common outdegree is called a subdegree of G . The author is interested in those groups for which the subdegrees are all finite. A half-line in an orbital graph Γ is a one-way infinite cycle-free path. Two half-lines L_1 and L_2 are said to be equivalent if there is an infinite number of pairwise-disjoint paths which connect a vertex on one path to a vertex on the other. The number of ends of Γ is the number of equivalence classes of half-lines. The author previously showed that if G is primitive and subdegree finite then all of its orbital graphs have the same ends and that the number of ends is either 1 or 2^{\aleph_0} [see *S. M. Smith*, J. Group Theory 10, No. 6, 817-828 (2007; Zbl 1131.20002)]. The first part of the present paper gives examples of both situations. The second part of the paper considers the subdegrees of a subdegree finite primitive group G and the relationship between subdegree growth, the structure of G , and the number of ends. For example, if G is subdegree finite and primitive with more than one end, then the increasing sequence of subdegrees (enumerated with multiplicities) grows exponentially if and only if G is distance transitive. *John D. Dixon (Ottawa)*

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