Title:	Integer sequences and monomial ideals
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Abstract:	Let Sn be the set of all permutations of [n]={1,…,n} and let W be the subset consisting of permutations σ∈Sn avoiding 132 and 312-patterns. The monomial ideal IW=⟨xσ=∏ni=1xσ(i):σ∈W⟩ in the polynomial ring R=k[x1,…,xn] over a field k is called a hypercubic ideal in Kumar and Kumar (Proc. Indian Acad. Sci. (Math Sci.) 126(4) (2016) 479–500). The Alexander dual I[n]W of IW with respect to n=(n,…,n) has the minimal cellular resolution supported on the first barycentric subdivision Bd(Δn−1) of an n−1-simplex Δn−1. We show that the number of standard monomials of the Artinian quotient RI[n]W equals the number of rooted-labelled unimodal forests on the vertex set [n]. In other words, dimk(RI[n]W)=∑r=1nr! s(n,r)=Per([mij]n×n), where s(n, r) is the (signless) Stirling number of the first kind and Per([mij]n×n) is the permanent of the matrix [mij] with mii=i and mij=1 for i≠j. For various subsets S of Sn consisting of permutations avoiding patterns, the corresponding integer sequences {dimk(RI[n]S)}∞n=1 are identified.
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