

# Independent sets, matchings, and leafy spanning arborescences

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The Maxleaves Problem consists of, given a rooted directed graph, finding a spanning arborescence with the maximum number of leaves. We will show a surprising relationship between Maxleaves in directed acyclic graphs and the problem of finding a maximum weight independent set in claw-free graphs of a certain size. Using this relation, we derive a  $7/5$ -approximation for Maxleaves in directed acyclic graphs using maximum matching.