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Recognizing vertex-transitive digraphs which are wreath products and double coset digraphs

We show that a Cayley digraph of a group G with connection set S is isomorphic to a nontrivial wreath product of digraphs if and only if there is a proper nontrivial subgroup $H \leq G$ such that $S \setminus H$ is a union of double cosets of H in G . We then give applications of this result which include showing the problem of determining automorphism groups of vertex-transitive digraphs is equivalent to the problem of determining automorphism groups of Cayley digraphs.