The zero forcing numbers and propagation times of gear graphs and helm graphs

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Zero forcing is a dynamic coloring process on graphs. Initially, each vertex of a graph is assigned a color of either blue or white, and then a process begins by which blue vertices force white vertices to become blue. The zero forcing number is the cardinality of the smallest set of initially blue vertices which can force the entire graph to become blue, and the propagation time is the minimum number of steps in such a zero forcing process. In this paper we will determine the zero forcing numbers and propagation times of two infinite classes of graphs called gear graphs and helm graphs.

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