

Extensions of the Hamiltonian Cycle/Path Problems

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In Graph Theory, a *Hamiltonian cycle (path)* in a graph is a cycle (path) that visits every vertex exactly once. Named after William R. Hamilton, inventor of the *Icosian Game* (1857), determining whether a graph contains a Hamiltonian cycle or path are well-known problems in Mathematics. Many variants to these problems have developed over the years, including the path partition and path cover numbers, closed and open k -walk numbers, Hamiltonian and traceable numbers, and the upper Hamiltonian and upper traceable numbers. We will discuss some old and new results for these variants for some special families of graphs.