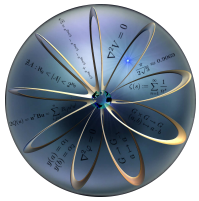

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Hamiltonian graph

Canonical name	HamiltonianGraph
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Related topic	HamiltonianPath
Related topic	OresTheorem
Related topic	BondyAndChvatalTheorem
Related topic	PetersensGraph
Related topic	Traceable

A graph G is *Hamiltonian* if it has a Hamiltonian cycle.

A useful condition both necessary and sufficient for a graph to be Hamiltonian is not known. Ore's theorem and the Bondy and Chvátal theorem give sufficient conditions, while a necessary condition follows quickly from the definition, namely:

Let $G = (V, E)$ be a graph of order at least 3. If G is Hamiltonian, then for every proper subset U of V, the subgraph induced by $V - U$ has at most $|U|$ components.