

Graphentheorie

5. Übungsblatt WS 05/06

Abgabetermin: 28.11.05

Exercise 22

Show that the graph of the dodecahedron is Hamiltonian.

Exercise 23

Prove that $K_{r,2r,3r}$ is Hamiltonian for every positive integer r .

Exercise 24

Prove that if G is a graph of order $n \geq 3$ and size $m \geq \binom{n-1}{2} + 2$, then G is Hamiltonian.

Exercise 25

Let G be a bipartite graph with partite sets U and W such that $|U| = |W| = k \geq 2$. Prove that if $\deg v > \frac{k}{2}$ for every vertex v of G then G is Hamiltonian.

Exercise 26

Prove that a non-Hamiltonian graph of order $n \geq 3$ has at most $\binom{n}{3} - (n-2)$ edges.