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Graphentheorie

9. Übungsblatt WS 05/06
Abgabetermin: 23.01.06

Exercise 42

Show that every tree has at most one perfect matching.

Exercise 43

Show that a tree G has a perfect matching iff $q(G - v) = 1$ for all $v \in V$.

Exercise 44

Prove: A graph G contains a set of independent edges covering all but at most d of the vertices iff

$$q(G - S) \leq |S| + d, \text{ for every } S \subset V(G).$$

Exercise 45

Prove: Every 3-regular graph without cut edges has a perfect matching.

Exercise 46

Prove that every 3-regular graph with at most two bridges contains a 1-factor.