



Assignment 9, Selected Topics in Combinatorial Optimization, Summer term 2014

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<http://www-cc.cs.uni-saarland.de/course/44/>

Due: 18 June 2014

Exercise 9.1 (10 Points) A matroid $M = (E, \mathcal{F})$ with rank function r_M is called connected if $r_M(U) + r_M(E \setminus U) > r_M(E)$ for each nonempty proper subset $U \subset E$. Show that M is connected if and only if M^* is connected.

Exercise 9.2 (10 Points) Let $M = (E, \mathcal{F})$ be a matroid representable over some field \mathbb{F} . Show that every minor of M is also representable over \mathbb{F} .