

Matroid Theory Tutorials (Summer 2020/2021):

(5) Higher Connectivity

Homework

HW 1. Let M be a k -connected matroid of at least $2k - 1$ elements. Show that M does not contain a set X of size at most k such that X is both a circuit and a cocircuit.

HW 2. Let M be k -connected matroid and (X, Y) be a Tutte k -separation of M such that $|X| = k$. Show that X is an independent cocircuit or coindependent circuit (i.e., circuit in M and independent in the dual of M).