Exercises solved at the recitation on 30. 10. 2007

- Let G be a graph with at least $k+1$ vertices. Show that G is k-connected if and only if for each two sets $S, T \subseteq V(G)$ with $|S| = |T| = k$ there are k disjoint paths connecting a vertex from S to a vertex from T.
- Let $k \geq 2$. Show that every k-connected graph with at least $2k$ vertices has a cycle of length at least $2k$. Show that there are arbitrarily large k-connected graphs with no cycle of length greater than $2k$.
- Every k-linked graph is $(2k-1)$-connected, but there are arbitrarily large k-linked graphs that are not $(2k)$-connected.