

Exercises for the PhD course Graph Theory

Lecture 5

1. Is there a function $f : \mathbf{N} \rightarrow \mathbf{N}$ such that for every $k \in \mathbf{N}$, every graph of minimum degree at least $f(k)$ is k -connected?
2. Show without using Menger's theorem that any two vertices of a 2-connected graph lie on a common cycle.
3. Let $k \geq 2$. Show that in a k -connected graph any k vertices lie on a common cycle.