

Math 3450:636

Homework 3

- 1) Recall that a graph G is *3-regular* or *cubic* if $d(v) = 3$ for each $v \in V(G)$. Show that if G is cubic then $\kappa(G) = \lambda(G)$.
- 2) Prove (rigorously) that $\lambda(K_n) = n - 1$. You may not use the fact that $\kappa \leq \lambda \leq \delta$.
- 3) Chartrand and Lesniak, p74, **3.17**.
- 4) Gould, Chapter 2, **12**.
- 5) A *block* of a graph G is a maximal connected subgraph of G that contains no cut-vertex. Prove that a connected graph G is k -edge-connected if and only if each block of G is k -edge-connected. (There are nice discussions of blocks in both books that may be useful to gain some additional insight.)