

Recommended Problems 8

- (8.1) Let G be a connected graph with at least three vertices. Form G' from G by adding an edge with endpoints x, y whenever $d_G(x, y) = 2$. Prove that G' is 2-connected.
- (8.2) Find the smallest 3-regular simple graph having connectivity 1.
- (8.3) Prove that the symmetric difference of two different edge cuts is an edge cut.
- (8.4) Let n, k be positive integers with n even, k odd, and $n > k > 1$. Let G be the k -regular simple graph formed by placing n vertices on a circle and making each vertex adjacent to the opposite vertex and to the $\frac{k-1}{2}$ nearest vertices in each direction. Prove that $\kappa(G) = k$.