Math 3450:636

Homework 5

1) Let G be a graph with $\sigma_2(G) \geq n+2k$ and let H be a subgraph of G with $\Delta(H) \leq k$. Show that there is a hamiltonian cycle C in G that uses no edge from H. (Equivalently, show that $G - E(H)$ is hamiltonian).

2) Let $n \geq 3$ be an integer. Determine the minimum size of a maximal (not maximum!!) matching in C_n.

3) Use the König-Egerváry Theorem to prove Hall's Theorem.

4) Show that every forest F has at most one perfect matching.

5) Read Theorem 9.21 in Chartrand and Lesniak, then do problem **9.21** (p 261).