Discrete Mathematics 21-228: Spring 2002
Homework.
HW8 due Monday 4/8/02

Q1: Prove that if a graph on n vertices has $\frac{n^2-3n+4}{2}$ or more edges, then it is connected.
Q2: Prove that a graph G is bipartite if and only if every subgraph H of G contains a set of vertices S such that (i) S contains at least half the vertices of H and (ii) S contains no edges of H.
Q3: Show that if $G = (V, E)$ is not connected then G^c is connected, where the complement $G^c = (V, V^{(2)} \setminus E)$ is the graph obtained by replacing edges by non-edges and vice-versa.