Math 135: Discrete Mathematics, Spring 2010
Worksheet 12

1. Consider the following graphs:

   Which graphs contain an Eulerian cycle? What about a Hamiltonian path?

2. In the graph from problem 1, find the size of the maximum independent set and the size of the largest clique.

3. Prove or disprove: Every disconnected graph has an isolated vertex.

4. Prove or disprove: Every Eulerian bipartite graph has an even number of edges. (Hint: Think about how you could count the total number of edges.)

5. Suppose that v is an endpoint of a cut edge. Prove that v is a cut vertex if and only if $d(v) > 1$.