Math 1116, Quiz #5, Spring 2013   Name _____ KEY _____
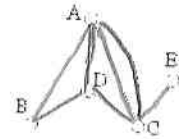
Instructions:

1. Consider the graph on the right. Determine the following:
   a. How many vertices does the graph have? List them.

   5 vertices   V: { A, B, C, D, E }

   b. List the edges of the graph.

   E: { AB, BD, DA, DC, AC, AC, CE }

   c. For each vertex, state the degree.

   A = degree 4, B = degree 2, C = degree 4, D = degree 3

   E = degree 1

   d. Using this information, determine if the graph contains an Euler circuit. If so, list the vertices in order you'd need to travel to complete it. If not, explain why not.

   No Euler circuit.
   graph contains odd vertices

   e. Does the graph contain an Euler path? If so, list the vertices in order you'd need to travel to complete it. If not, explain why not.

   it does contain an Euler path since there are 2 odd vertices
   for example: E, C, A, B, D, A, C, D.   your answers may vary but start at E or D and end at the other one.

   f. In the space below, draw two graphs of your choice. Each graph should have at least eight vertices (but may have more). The first graph should have an Euler circuit. The second graph should have an Euler path (but not a circuit).