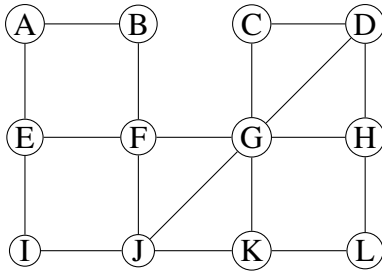


Name: _____ score: _____ / 10

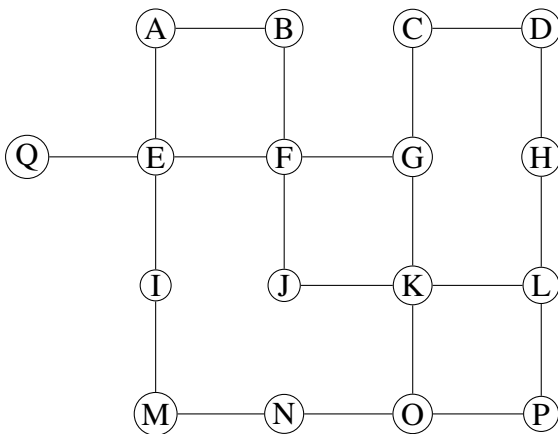
There are 10 points possible on this quiz. No aids (book, notes, etc.) are permitted. You may use a calculator. **Show all work and supporting calculations for full credit. Explain how you get your answers.**

1. (3 points) Answer questions about the graph below.

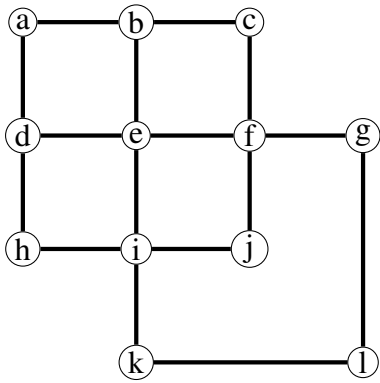


- (a) **Circle or shade** all vertices of odd degree.
- (b) Determine if the graph has an Euler circuit. Justify your answer.

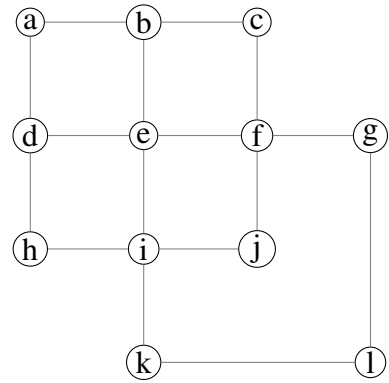
2. (3 points) Eulerize the graph below **using as few edge duplications as possible.**



3. (2 points) Find a Euler **path** in the graph, G , below. Indicate your path by drawing arrows on the edges and numbering the edges. Label the starting and ending vertices. (There is a copy of the graph as scratch if needed. **Clearly indicate which graph you want graded.**)

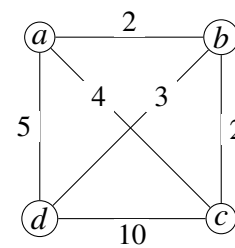
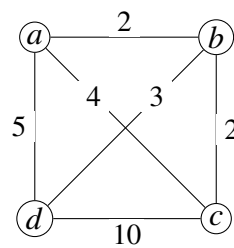
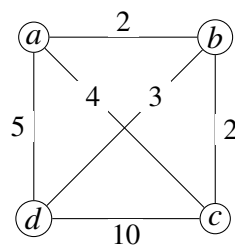
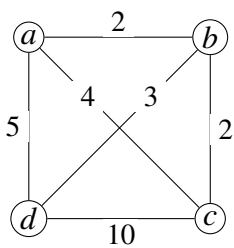


Graph G



another copy of Graph G

4. (2 points) Find a Hamiltonian circuit of minimum weight in the graph below. Several other copies of the graph provided.



vertices of the Hamiltonian circuit: _____

weight: _____