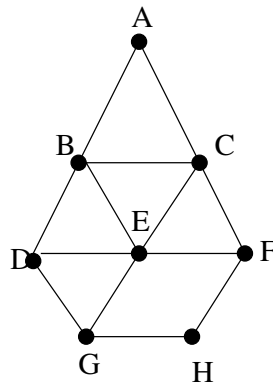


Quiz 1 : Correction
Friday, Jan. 26.

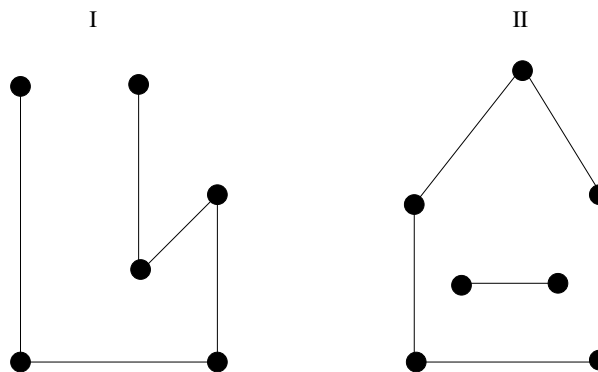
NAME _____

1. What is the valence of the vertex E in the following graph?



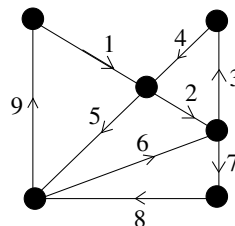
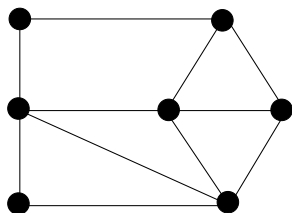
Answer : 5 (count the number of edges starting from E)

2. Is graph I connected? And graph II?



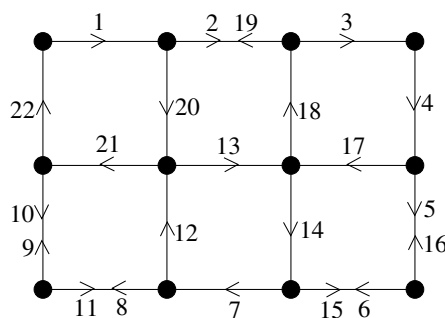
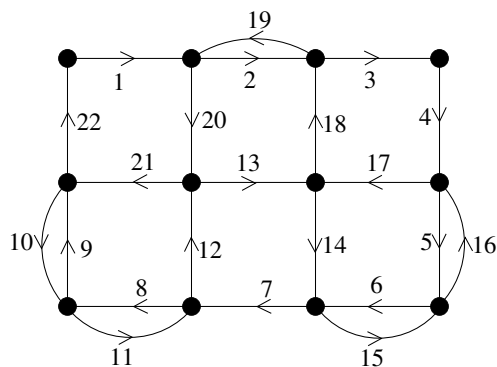
Answer : Graph I is connected (there is a path joining any two vertices) and graph II is not (you cannot go from one of the “inside” points to one of the “outside” points).

3. For each of the graphs below, state whether it has an Euler circuit. If the answer is yes, draw such a circuit (use arrows and number the sequence of edges in the order traveled).



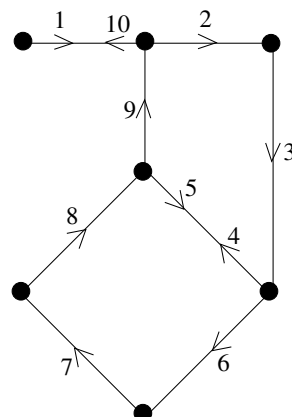
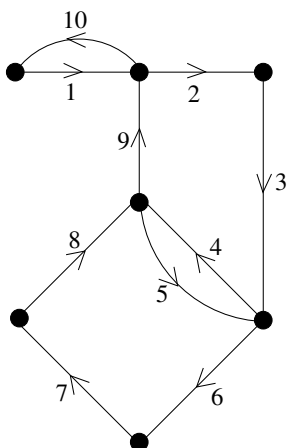
Answer. Graph I doesn't have an Euler circuit, because there are odd-valent vertices (for instance the top-right vertex is odd-valent).
Graph II does have an Euler circuit, as the figure above shows.

4. Find an efficient eulerization of the following graph; draw a circuit that reuses 5 edges.
(Use the left-hand graph to draw the Eulerization, and the right-hand graph to draw the circuit that reuses 5 edges)



Answer : See the pictures above (to Eulerize this rectangular graph I used the edge-walker algorithm ; the circuit on the right is obtained by squeezing the circuit from the Eulerized graph).

5. Same question, except that this time you must draw a circuit that reuses 2 edges.



Answer. See the pictures above.