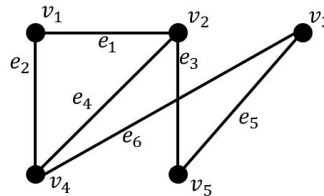


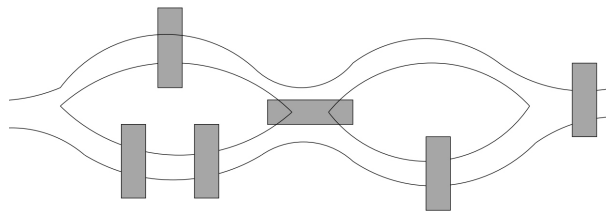
CSci 243 Graph Practice

My name

1. Show that a simple graph with $n \geq 2$ vertices must have two vertices of the same degree.
2. For the graph below, give its adjacency list, adjacency matrix, and incidence matrix.



3. Can someone cross all six bridges shown in the map exactly once and return to the starting point? Why?



4. Is the graph below undirected or directed? If it's undirected, is it connected? If it's directed, is it strongly connected?

$$\begin{bmatrix} 0 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{bmatrix}$$