**Homework 10: Due Thurs. Nov. 21**  
*Instructor: Tyler Simon*

**Problem 1:**  
Draw the graph that has the following adjacency matrix:

\[
\begin{bmatrix}
0 & 1 & 1 & 1 \\
1 & 0 & 1 & 0 \\
1 & 1 & 0 & 0 \\
1 & 0 & 0 & 0 \\
\end{bmatrix}
\]

**Problem 2:**  
Show that the graphs \( G = (V, E) \) and \( H = (W, F) \) shown below are isomorphic.

(a) Graph G  
(b) Graph H

**Problem 3:**  
Draw the simple graph \( G = (V, E) \) with vertex set \( V = \{a, b, c, d, e\} \) and edge set \( E = \{ab, ae, bc, bd, ce, de\} \) Write down the adjacency matrix.
Problem 4:
• Find a hamiltonian cycle in the graph below. Find cycles
• Find cycles of length 3, 4, 5, 6 and 7.