1. Find the adjacency matrix $A$ for this graph.

2. Draw this graph with relabeled vertices so that this (bipartite) graph has a “nice” adjacency matrix representation.

3. Find the new adjacency matrix $A'$. 
4. Find the bijection (permutation) corresponding to this relabeling.

5. Find a matrix $P$ that left-multiplication permutes the rows of $A$ and a matrix $P'$ that right-multiplication permutes the columns of $A$ and such that $A' = PAP'$.

6. Check that $P$ and $P'$ are inverses.