Assignment

1. Use the first method (*discussed in class*) to find the transitive closure **R*** of the relation
   R = {(1, 2), (2,1), (2,3), (3,4), (4,1)} defined on set **A = {1, 2, 3, 4}**.

2. Explain *Warshall's algorithm* and use this algorithm to find the transitive closures of the
   relation **R = {(1, 2), (1,3), (1,4), (2,3), (2,4), (3, 4)}** defined on the set **A = {1, 2, 3, 4}**.
   (read/refer the pages 603, 604, 605 and 606 of 7ᵗʰ edition discrete mathematics book).

3. Determine whether the relation with the directed graphs shown below is an equivalence
   relation.

   (a)   **(b)**
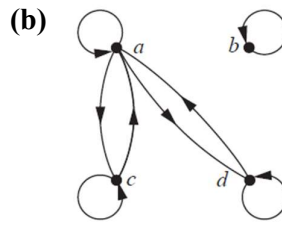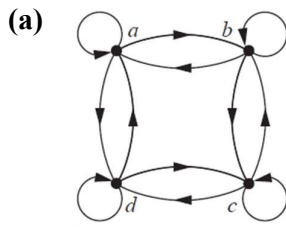
4. List the *ordered pairs* in the equivalence relation **R** produced by the partition.
   A₁ = {2, 3, 4}, A₂ = {1, 5}, and A₃ = {6} of S = {1, 2, 3, 4, 5, 6}. Note that A$_1$, A$_2$ and A$_3$
   are the equivalence classes of the relation.