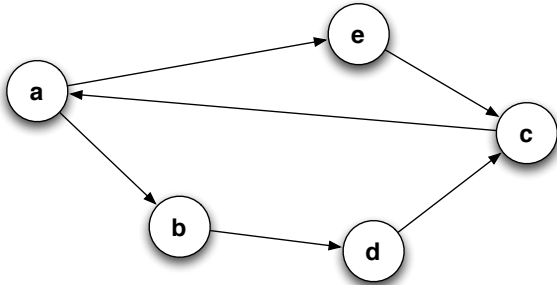


Show all work clearly and in order. Justify your answers whenever possible; You have 30 minutes to take this 10 point quiz.

1. (5 points) Find the transitive closure of the following graph.



2. (5 points) Assuming that all the edges in the graph above have edge weight 2, except the edge  $c \rightarrow a$  has weight -3. Reweight the graph and show the shortest path tree rooted at the node  $b$  using Dijkstra's algorithm