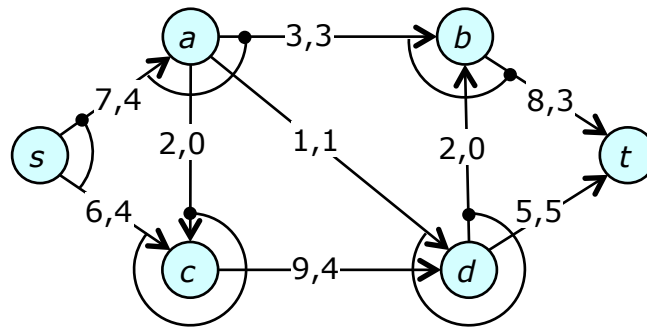# Review Questions 17

Your Name:

Please print out this form (two-sided, if you can) and write your answers *legibly* in the spaces provided. If you can't write legibly, type.

1. The figure below shows an intermediate state in the execution of Dinic's' algorithm. This is the state at the start of the second phase. The circular arc around the vertices represent the adjacency lists and the dots on the arcs indicate the positions of the *nextedge* pointers. Label each vertex *u* with the value of *level(u)*. Cross out all edges that Dinic's algorithm will ignore during its augmenting path searches in the next phase.

2. What is next augmenting path returned by Dinic's algorithm? Redraw the graph showing the updated positions of all *nextedge* pointers following the next augmenting path search. Assume that *nextedge* pointers move through the adjacency lists in the clockwise direction on the diagram.

3. Are there any other augmenting paths found during the current phase? If so, list them. What is the value of $level(t)$ at the start of the next phase?