

Quiz 5

Your name here:

4/9/2013

1. (5 points). This problem concerns Dinic's algorithm for the maximum flow problem. Suppose that at the start of some phase, a top level call to *findpath* examines 25 edges and returns an augmenting path with 10 edges, how many times are *nextedge* pointers advanced during this execution of *findpath* (including all recursive calls)?

If the next call to *findpath* succeeds, what is the length of the path that is returned?

Suppose that the flow graph has 50 edges, what is the largest possible number of *additional* top level calls to *findpath* in the current phase (that is, after the first two)?

2. (5 points) The diagram below shows an intermediate state in the execution of the preflow-push algorithm. Show the state after the vertices in the queue have all been processed, using the second diagram below. Remember to show the updated *nextedge* pointers.

