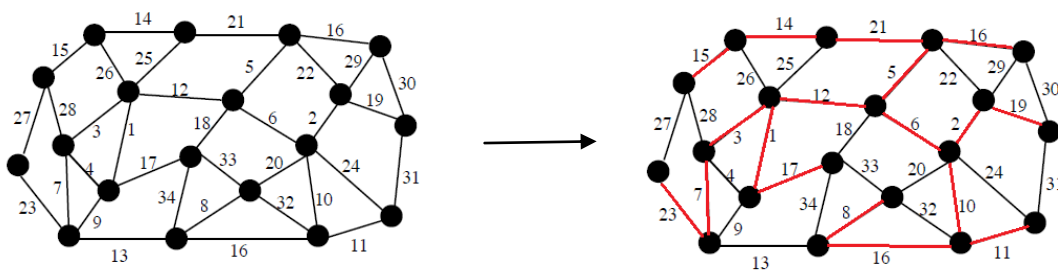


Please follow these rules strictly:

1. Write your name and EWUID on **EVERY** page of your submission.
2. Verbal discussions with classmates are encouraged, but each student must independently write his/her own solutions, without referring to anybody else's solution.
3. The deadline is sharp. Late submissions will **NOT** be accepted (it is set on the Blackboard system). Send in whatever you have by the deadline.
4. Submission must be computer typeset in the **PDF** format and sent to the Blackboard system. I encourage you all to use the LATEX system for the typesetting, as what I am doing for this homework as well as the class slides. LATEX is a free software used by publishers for professional typesetting and are also used by nearly all the computer science and math professionals for paper writing.
5. Your submission PDF file must be named as:
firstname_lastname_EWUID_cscd320_hw7.pdf
 - (1) We use the underline ' ' not the dash '-'.
 - (2) All letters are in the lower case including your name and the filename's extend.
 - (3) If you have middle name(s), you don't have to put them into the submission's filename.
6. Sharing any content of this homework and its keys in any way with anyone who is not in this class of this quarter is NOT permitted.

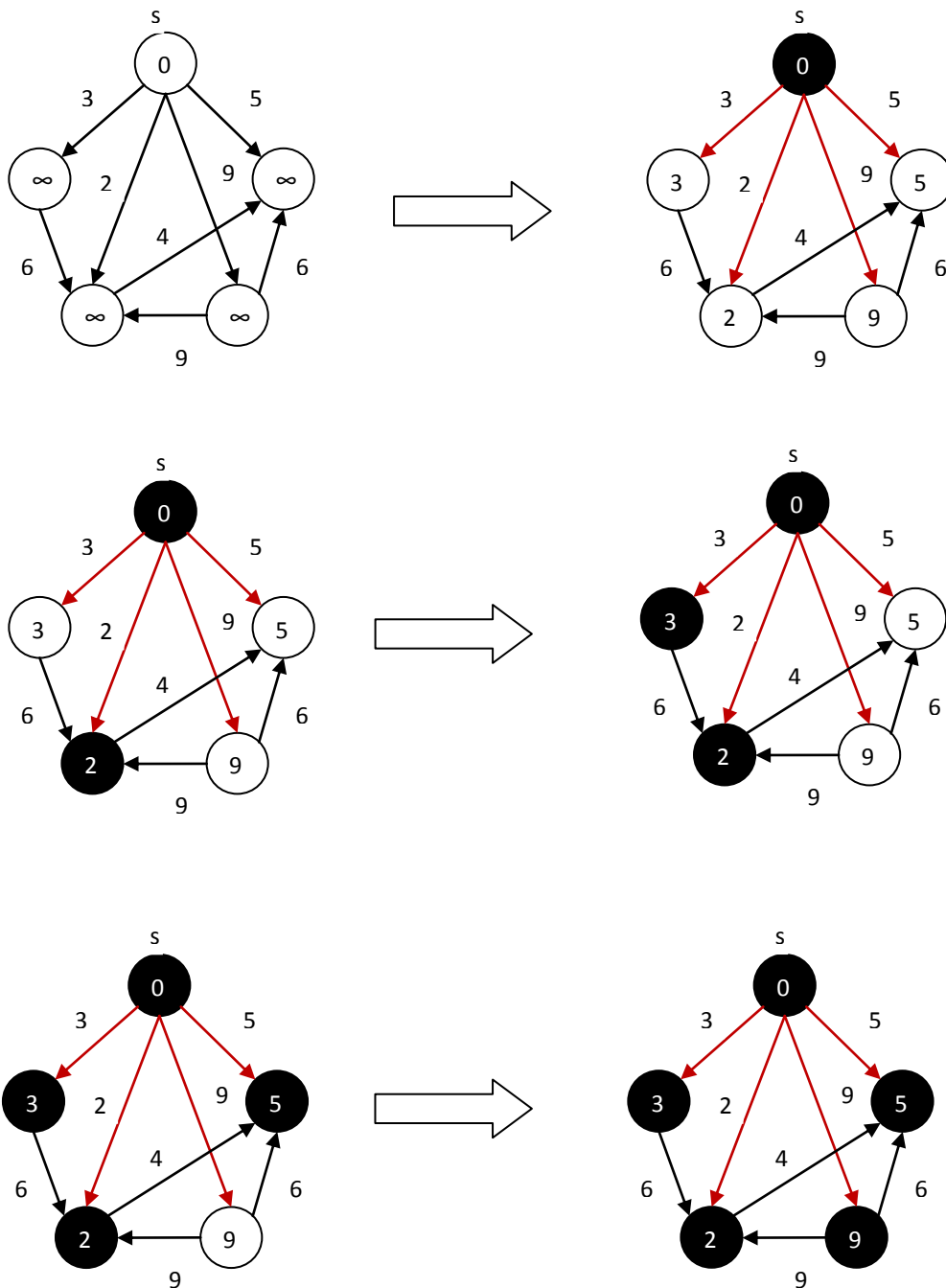
Total: 50 points

Problem 1 (20 points). Show a minimum spanning tree (MST) of the following connected undirected graph by using any method. You don't have to trace the algorithm that you use, but instead you can just show the MST by making the tree edges in a different color.



Red paths are the MST of the graph.

Problem2 (30 points). Trace the Dijkstra's algorithm to show the shortest paths from the vertex s to all the other vertices in the following connected directed graph. (See Figure 24.6 of CLRS, 3rd Ed. as an example.)



Paths marked in red are the shortest paths from s to other vertices.