CECS 528, In Class Assignment 5, February 16th, 2026, Dr. Ebert
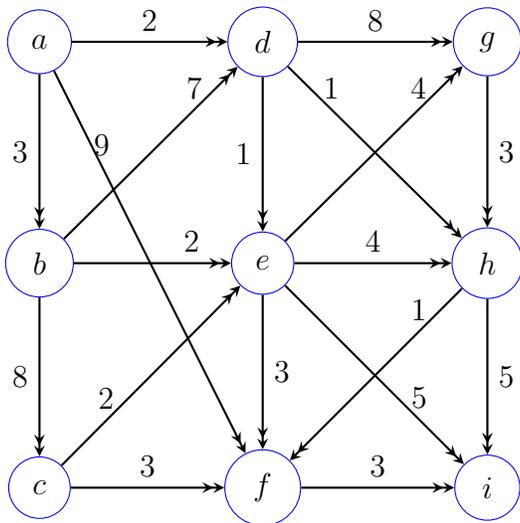
Student Names:

Problem

1. For the network (directed, weighted graph) shown below with source vertex a, demonstrate Dijkstra's algorithm by taking turns completing each column of the accompanying table. The student who completes the column should initialize it at the bottom and also update the current Dijkstra Distance Tree (DDT), writing the distance from source to vertex v, next to v in the tree. (3 pts for each column).

2. On a separate sheet(s) of paper, for Rounds 4, 5, and 6, the student who completes the column should also draw a plausible state of the binary heap at the beginning of the round. Then redraw the heap after a single `pop` operation. Finally, redraw the heap one last time (or write "no changes") to reflect any changes due to priority increases. Student: please write your name and Round next to the heaps that you provided. (6 pts each)

Provided Network

Dijkstra Distance Tree

Table of i-Neighboring Distances, $i = 0, \ldots, 8$

Student Names:

Node/Round	1st/par	2nd/par	3rd/par	4th/par	5th/par	6th/par	7th/par	8th/par	9th/par
a									
b									
c									
d									
e									
f									
g									
h									
i									