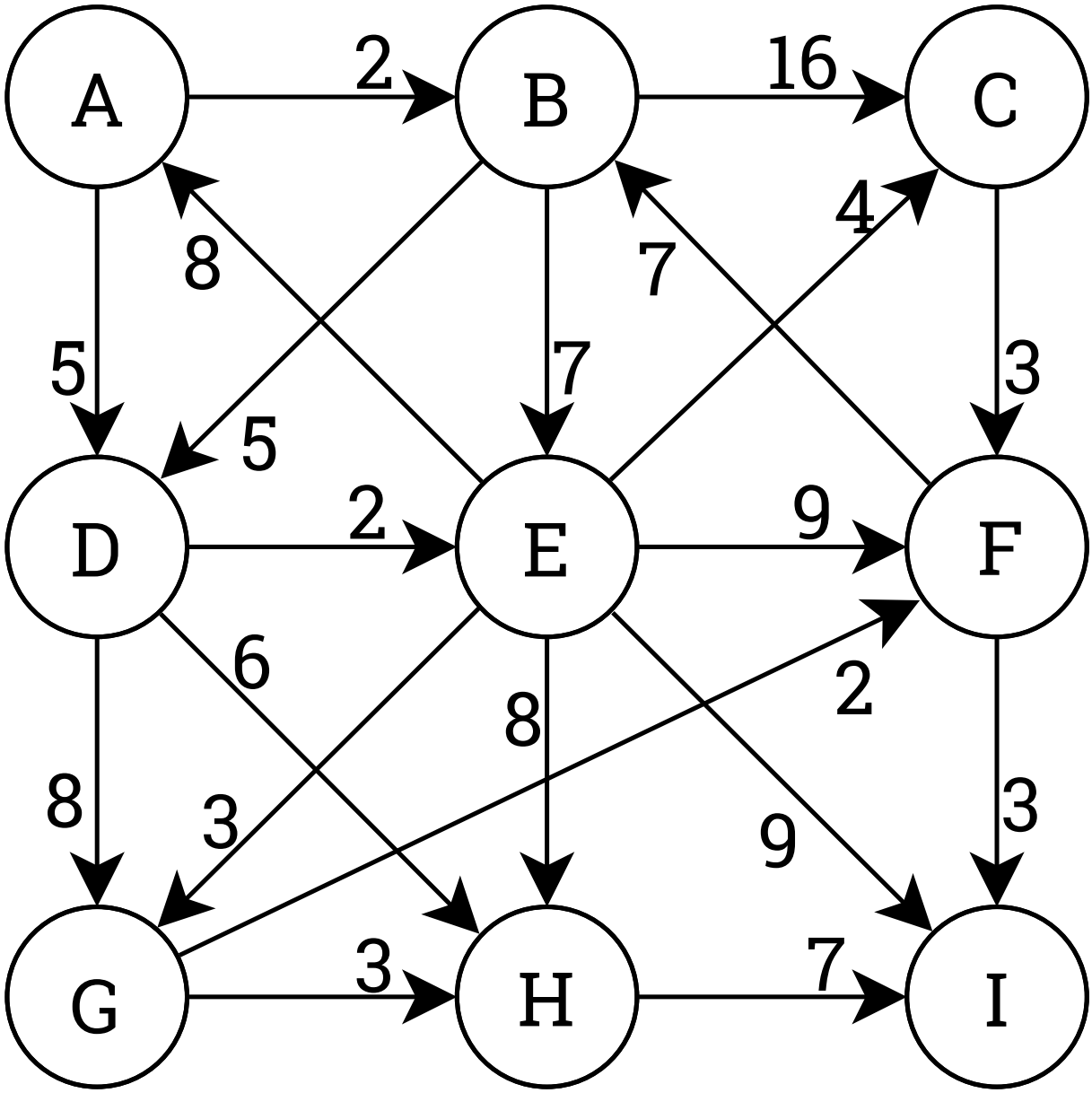
Tietorakenteet ja algoritmit II 20.-21.11.2025

Exercise 4

13. Simulate manually the functionality of Dijkstra algorithm for attached weighted directed graph with A as the starting vertex. Write the modified contents of distance vector D after each stage (selection of vertex). As you maintain the distance vector D, maintain also the predecessor vector P. Whenever you find a new shorter path to vertex w via vertex v, update $P[w]=v$. Using this predecessor vector, we get the actual paths after the main algorithm has terminated.



14. Simulate by drawing manually (a) Prim algorithm, (b) Kruskal algorithm for the attached tree to find minimum spanning tree. Use A as the starting vertex in Prim algorithm. It is easiest to draw by marking the vertices and edges of the spanning tree directly to the picture.