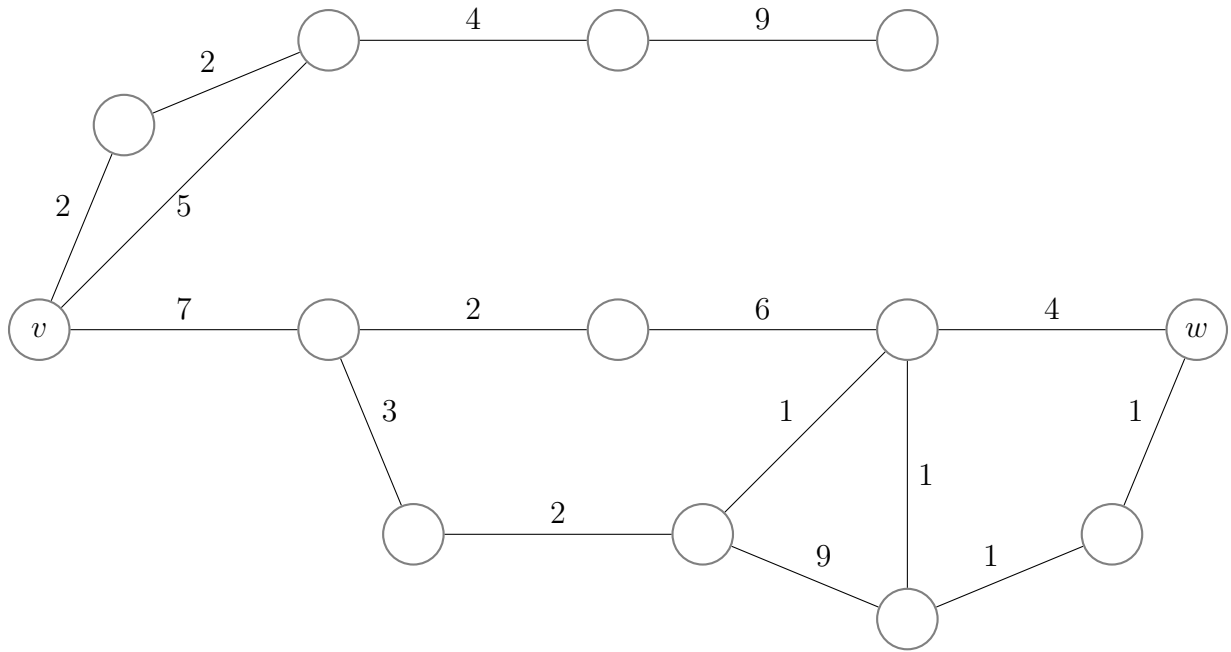
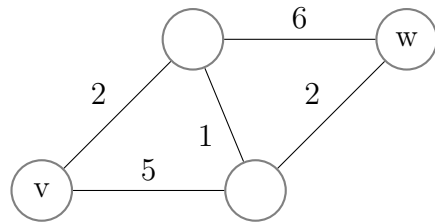
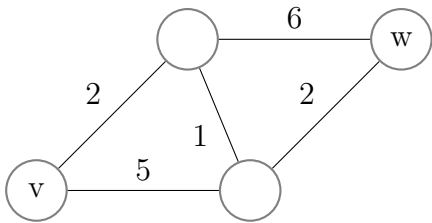
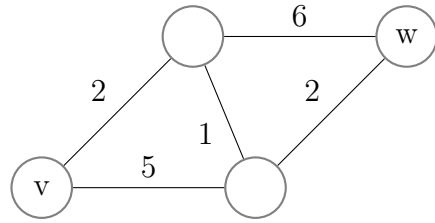
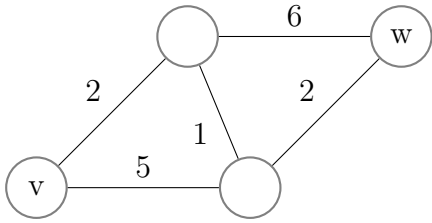
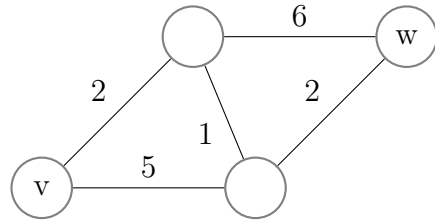
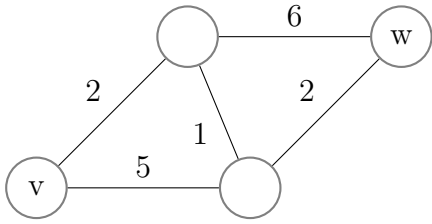


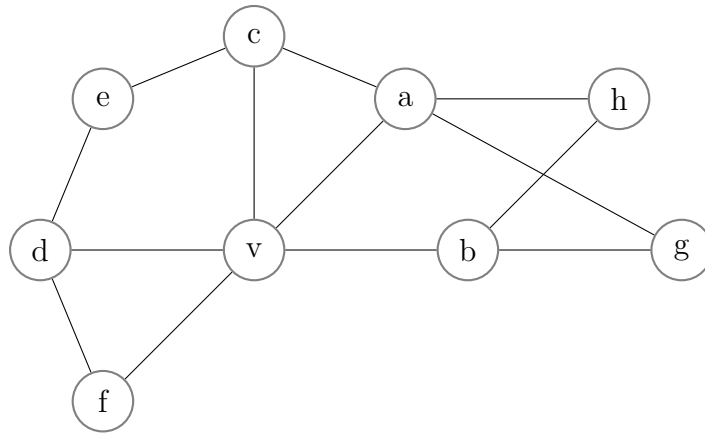
6) On the graph below, use Dijkstra's algorithm to find the shortest path from v to w . Please use different colors to signify different meanings, and make a legend below to explain the colors. (12 points)



7) Below is a graph (actually 6 drawings of it). You can run Dijkstra's algorithm on this graph in at most 6 steps - do so, using each new graph to illustrate one new step. (6 points)



8) In the graph below, identify a cycle of length 4 through vertex v that does not include vertex d . (4 points)



9) Sketch a graph with the adjacency matrix given below. (4 points)

$$\begin{bmatrix} 0 & 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & 1 & 0 \end{bmatrix}$$