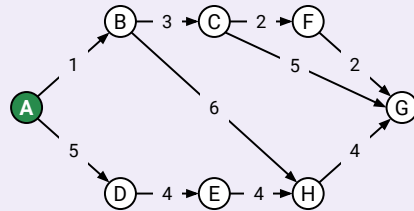**Q** Dijkstra's Algorithm

Give the order in which Dijkstra's algorithm would visit each vertex starting from vertex A, where "visiting a vertex v" means "relaxing all of the edges out of v."

Q Weight Modification

Change one of the weights in the graph so that the shortest paths tree returned by Dijkstra's algorithm is not correct.

Q1: Give the order in which Dijkstra's algorithm would visit each vertex starting from vertex A, where "visiting a vertex v" means "relaxing all of the edges out of v."
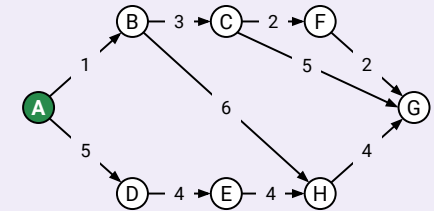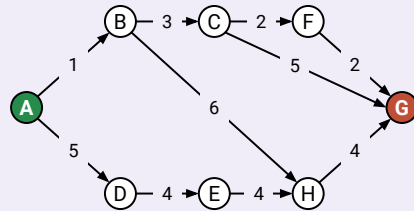
Q1: Change one of the weights in the graph so that the shortest paths tree returned by Dijkstra's algorithm is not correct.

A* Search

Give the path that A* search returns from A to G with the heuristic defined below.

- h(A, G)   = 2
- h(B, G)   = 2
- h(C, G)   = 20
- h(D, G)   = 2
- h(E, G)   = 6
- h(F, G)   = 2
- h(G, G)   = 0
- h(H, G)   = 2

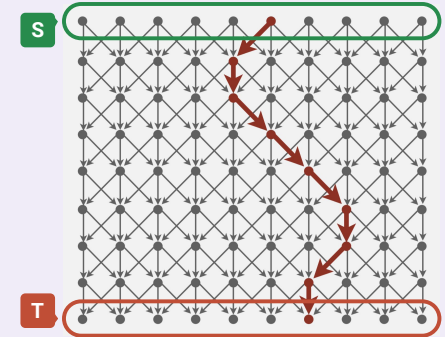**Q1**: Give the path that A* search returns from A to G with the heuristic defined below.

Seam Carving

Given a digraph with positive edge weights, and two distinguished subsets of vertices **S** and **T**, find a shortest path from any vertex in **S** to any vertex in **T**.

Give a reduction from seam carving to single-pair shortest paths.

Vertex.	Pixel in image.
Edge.	Cost to go from a pixel to its 3 downward neighbors.
Weight.	Energy function of 8 neighboring pixels.
Seam.	Shortest path (sum of weights) from top to bottom.

Q1: Give a reduction from seam carving to single-pair shortest paths.