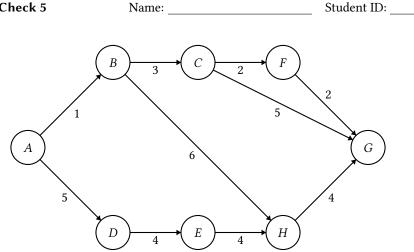
## CSE 373 QuickCheck 5



1. 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."



2. Change one of the weights in the graph so that the shortest paths tree returned by Dijkstra's is not correct. *Hint*: We showed in class that Dijkstra's shortest paths tree is correct so long as all edges are non-negative.

Set the weight of the edge connecting vertex \_\_\_\_\_ and vertex \_\_\_\_\_ to the integer weight \_\_\_\_\_.

3. Suppose we use the following heuristic.

$$h(A, G) = 2$$
  

$$h(B, G) = 2$$
  

$$h(C, G) = 20$$
  

$$h(D, G) = 2$$
  

$$h(E, G) = 6$$
  

$$h(F, G) = 2$$
  

$$h(G, G) = 0$$
  

$$h(H, G) = 2$$

Recall that A<sup>\*</sup> search is just Dijkstra's algorithm, except that the priority of a vertex v is given by the sum of the distance from the source to v plus h(v, G), and also that we stop the search when the target is visited. Give the **path** (not order visited) that A<sup>\*</sup> search returns from *A* to *G*. You may not need all blanks.