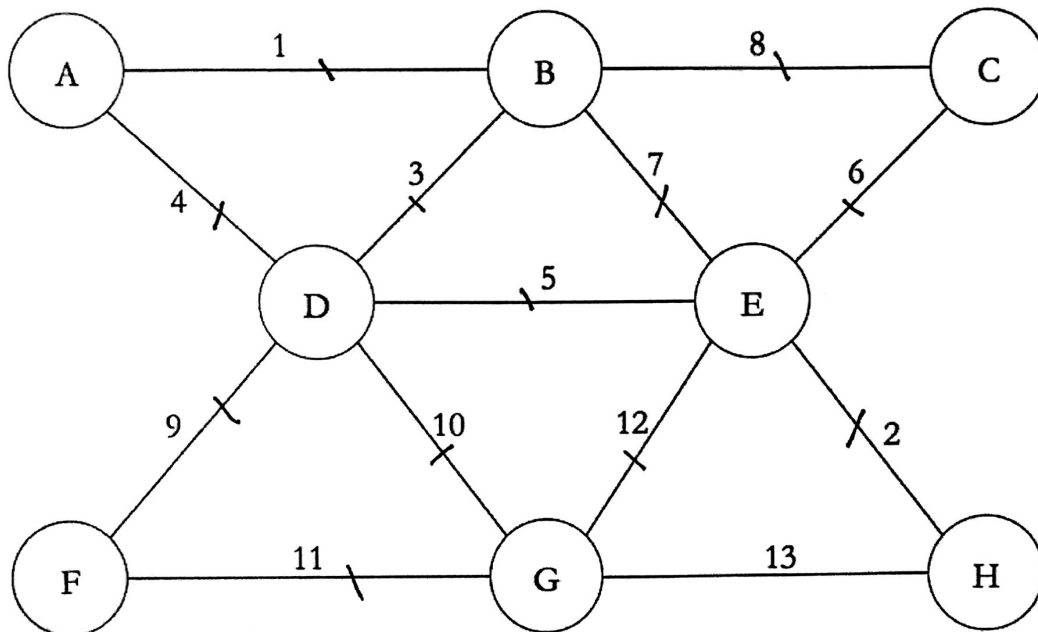


#### 4 Kruskal's Algorithm

For the following graph, find the minimum spanning tree using Kruskal's Algorithm. Provide an ordering of the edges before running the algorithm, then indicate whether that edge is added into the MST. If it is not added, give the cycle that prevents it from being added. If the algorithm terminates early, indicate when it does so.



Edges in sorted order:

- |           |            |
|-----------|------------|
| 1 (A, B). | 11 (F, G)  |
| 2 (E, H)  | 12 (E, G)  |
| 3 (B, D). | 13 (G, H). |
| 4 (A, D). |            |
| 5 (D, E)  |            |
| 6 (C, E)  |            |
| 7 (B, E)  |            |
| 8 (B, C)  |            |
| 9 (D, F)  |            |
| 10 (D, G) |            |

Output:

(A, B), (E, H), (B, D),  
(C, E), (D, F), (D, G),

loop ends since all  
vertices are in the set.  
(edges = vertices - 1).