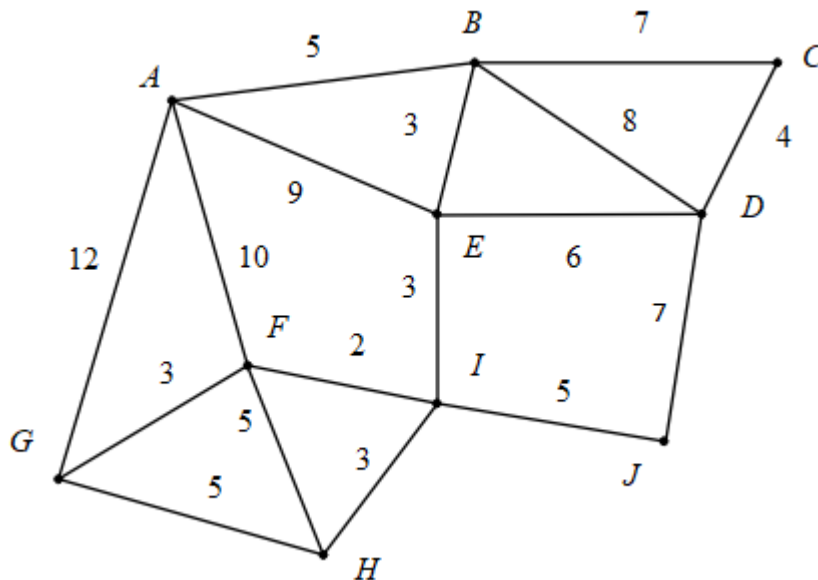


Minimum Connector Exercises (2 pages; 9/3/26)

(1) For the network below:



- (i) Apply Kruskal's algorithm to create a minimum spanning tree (showing the order in which arcs are added), and giving the total weight.
- (ii) Apply Prim's algorithm to create a minimum spanning tree - starting at A (showing the order in which nodes are added), and giving the total weight.
- (iii) Create a distance matrix for the network.
- (iv) Use this matrix to apply Prim's algorithm - starting at J this time.

(2) Minimum connectors M_1 & M_2 have been found for two networks. A new network N is then formed by joining together M_1 & M_2 by the arcs AB and CD , where A & C are nodes in M_1 and B & D are nodes in M_2 .

The tree T is then formed from M_1 and M_2 , together with the shorter of AB and CD . Is T always, sometimes or never a minimum connector for N ?