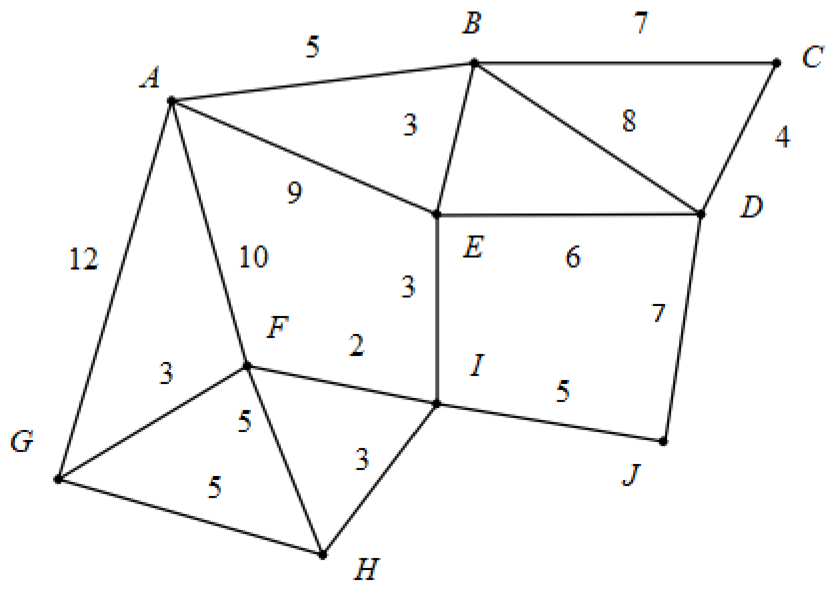
Minimum Connector Overview (17/6/21)

Q1 [Practice/E]

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.

Q2 [5 marks]

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?