**MINIMUM SPANNING TREES**

**Introduction:**

* A **spanning tree** is a subgraph of connected undirected weighted graph, which has all the vertices connected with minimum possible number of edges.
* A spanning tree has (E – 1) edges where E is the number of vertices in the given graph.
* A connected undirected weighted graph can have more than one spanning trees
* A spanning tree is said to be **Minimum spanning tree** if the total cost of all its edges is mimimum than other spanning trees.

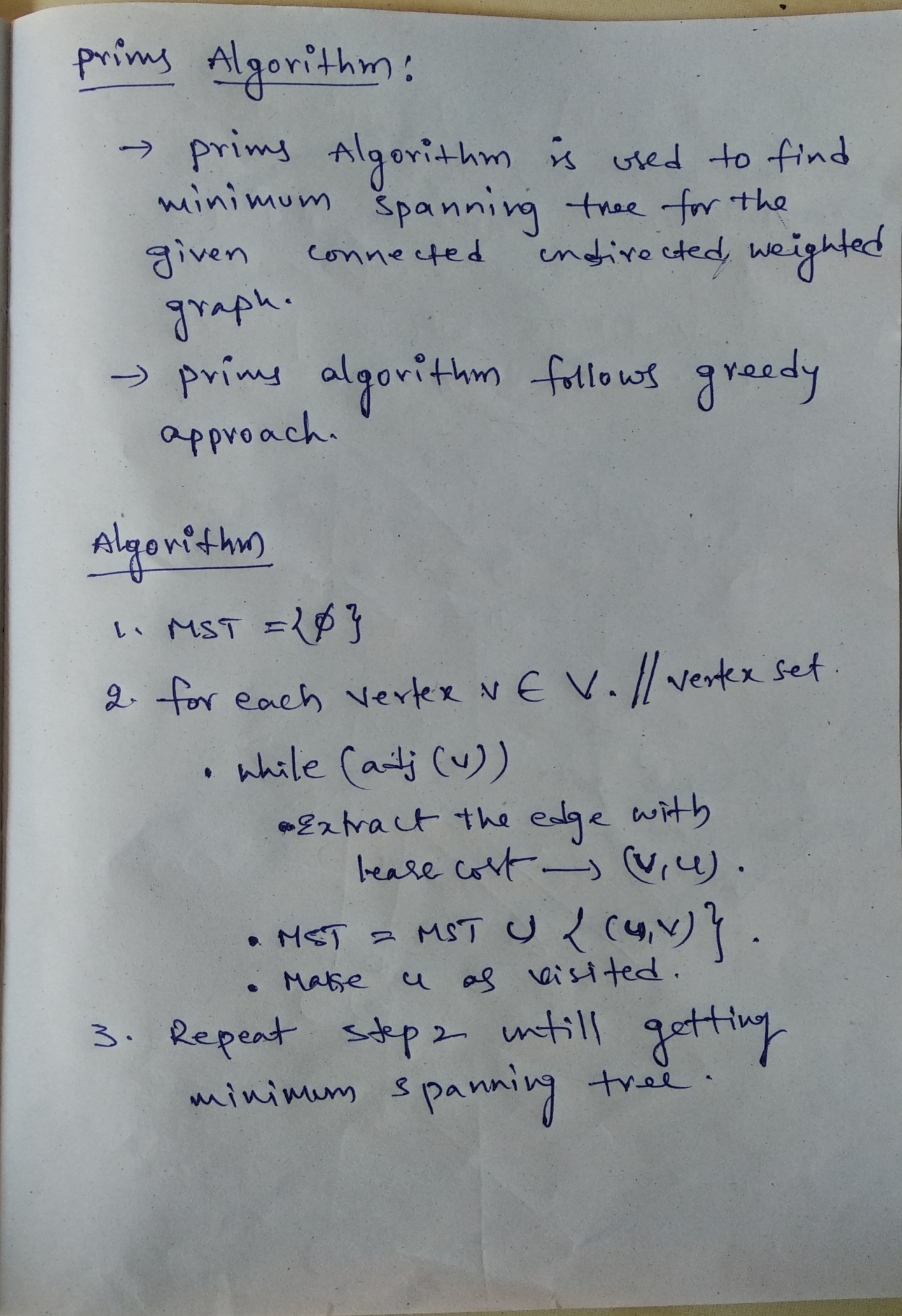
**Applications:**

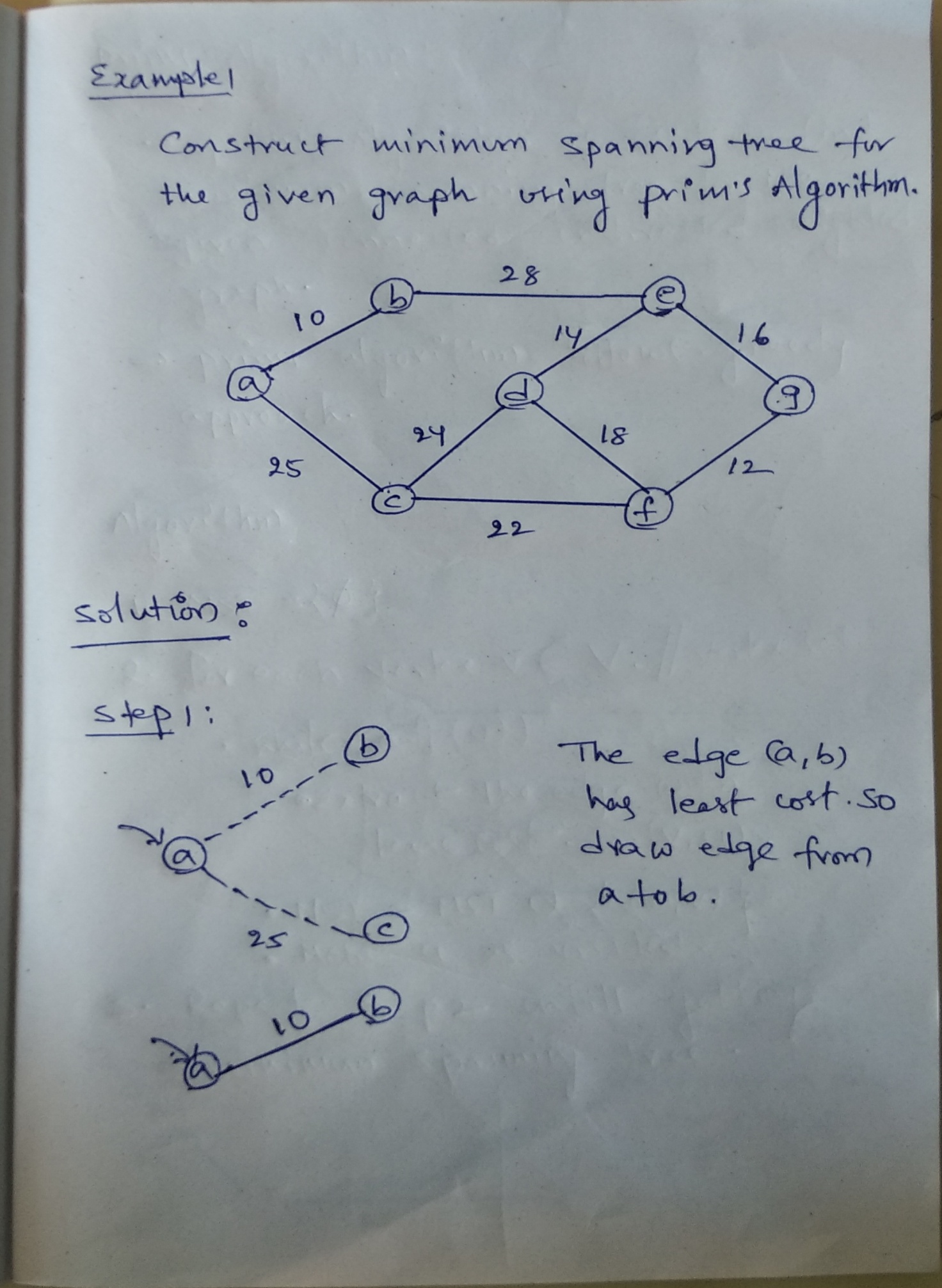
* Network design.  
  – telephone, electrical, hydraulic, TV cable, computer, road
* Cluster analysis
* Autoconfig protocol for Ethernet bridging to avoid cycles in a network
* Handwriting recognition
* Image segmentation

**Minimum Spanning Tree Algorithms:**

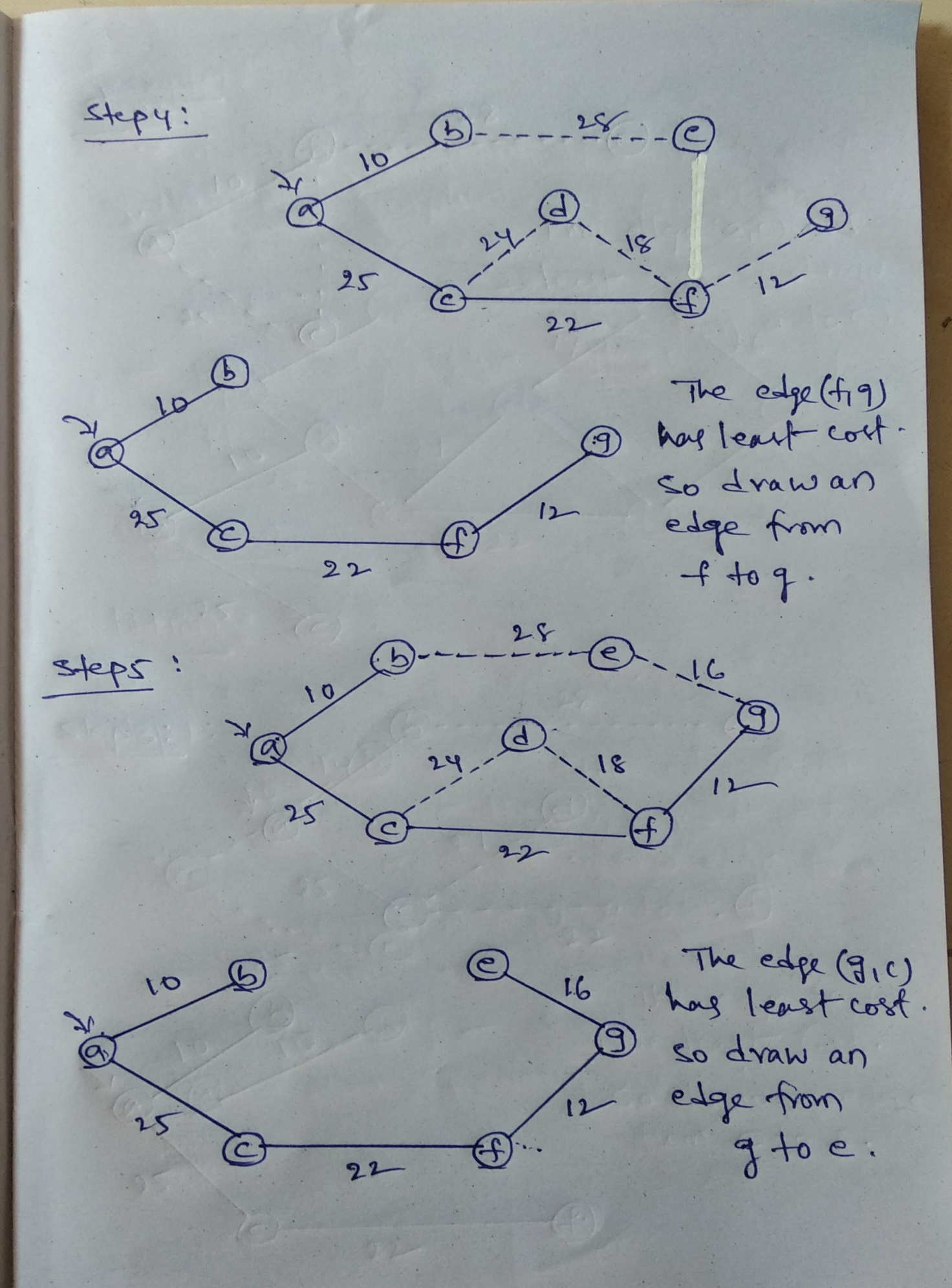
There three types of minimum spanning tree algorithms

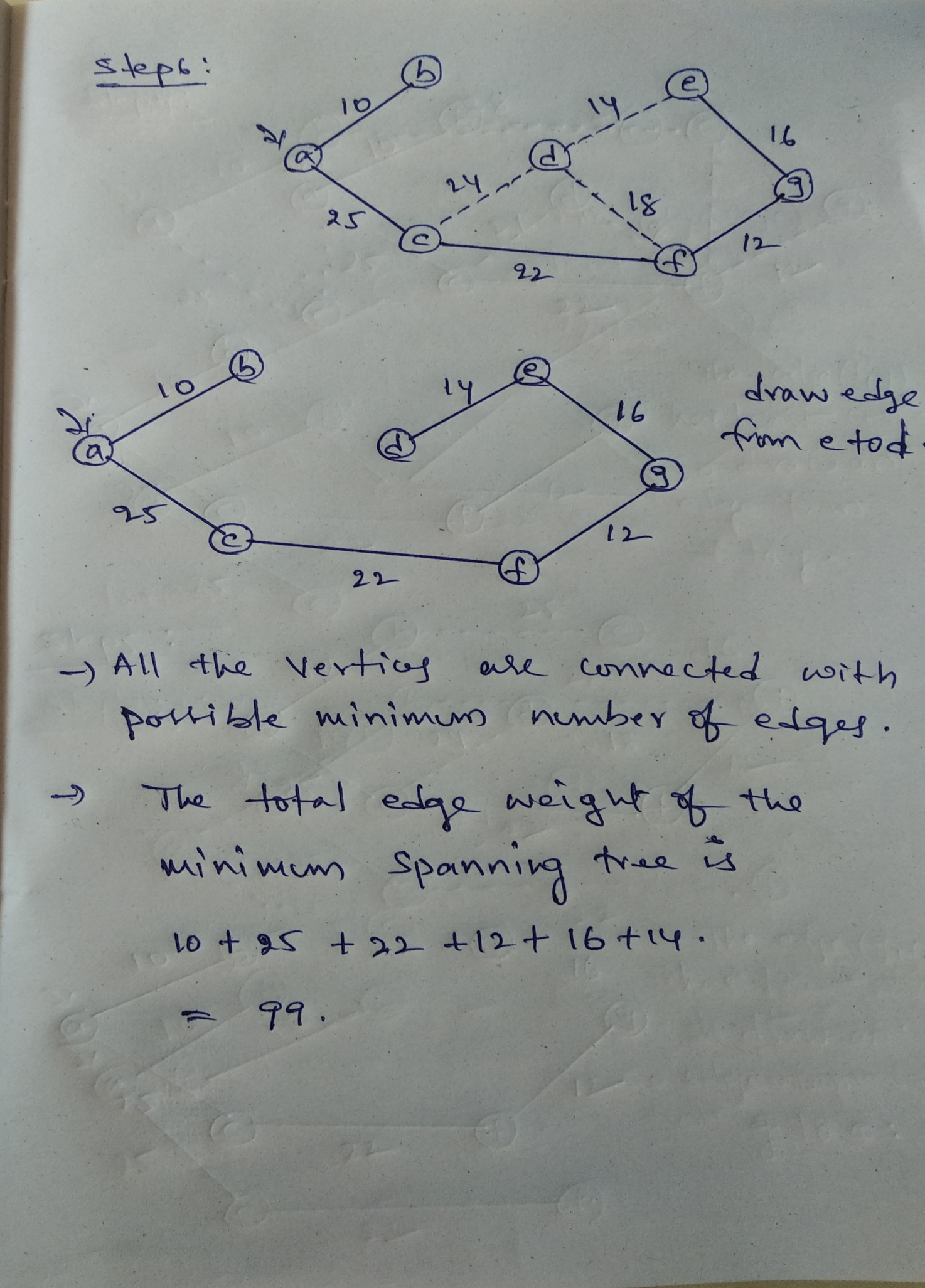
* Prim's algorithm
* Kruskal's algorithm
* Bahruka's algorithm

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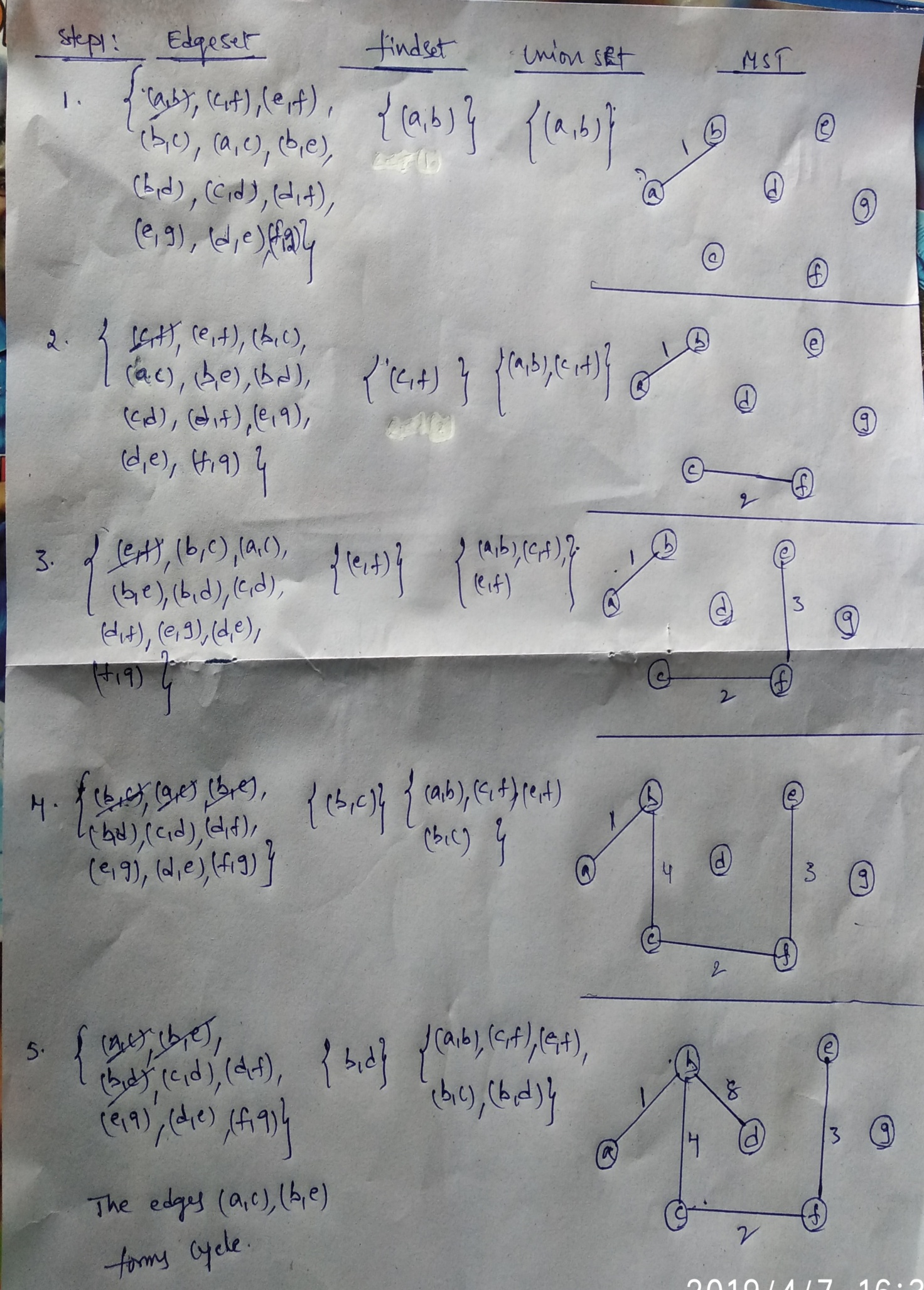
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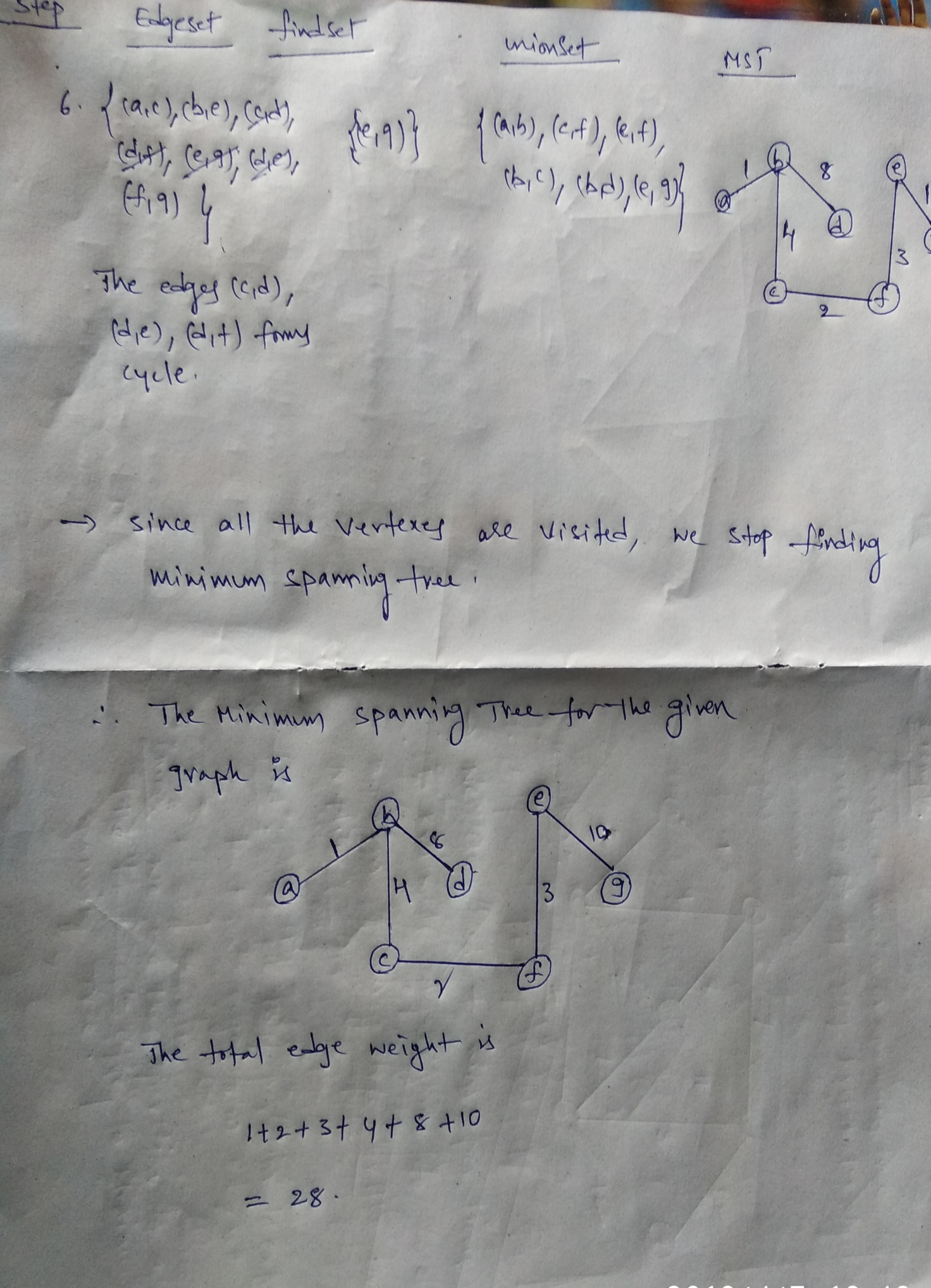
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