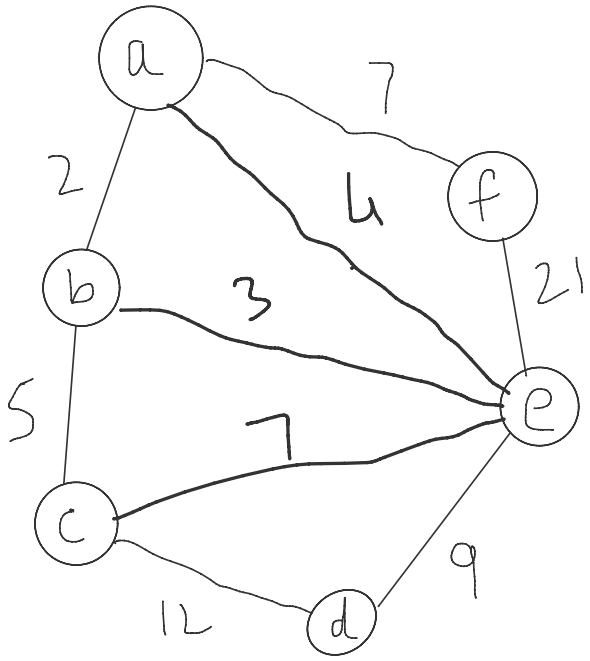
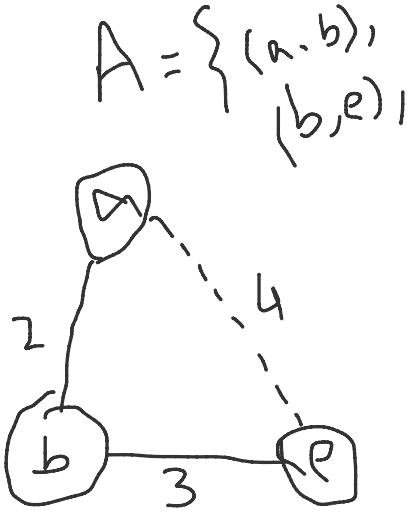
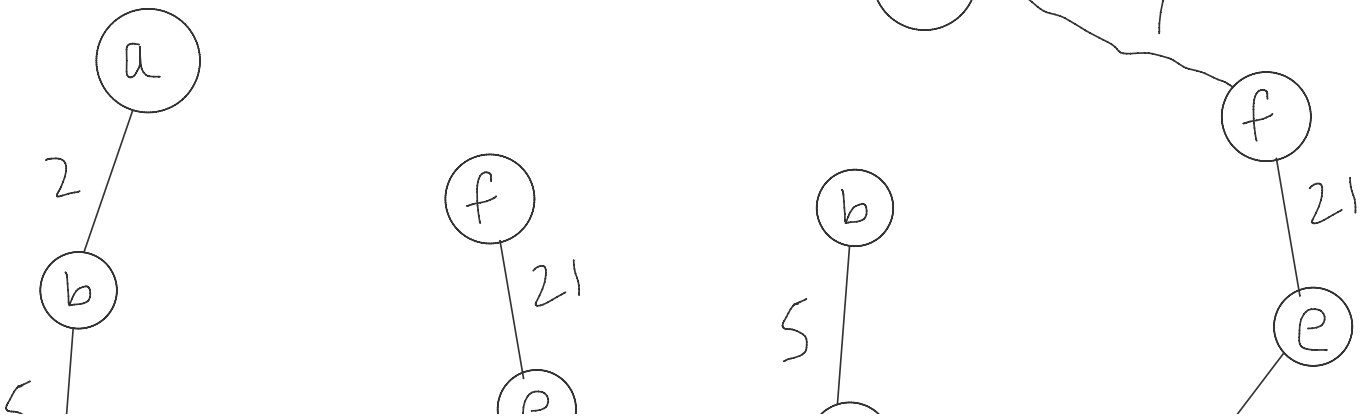
L23 - Minimum Cost/Weight Spanning Tree

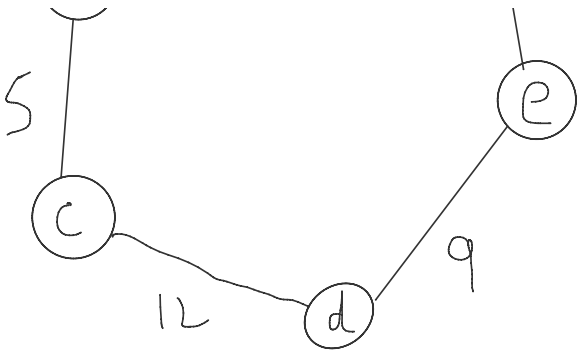
Tuesday, June 23, 2020 8:55 AM

A Spanning Tree of a connected, undirected and weighted graph G is a tree of |V| - 1 edges that contain all the vertices of the graph G and all vertices are also connected.









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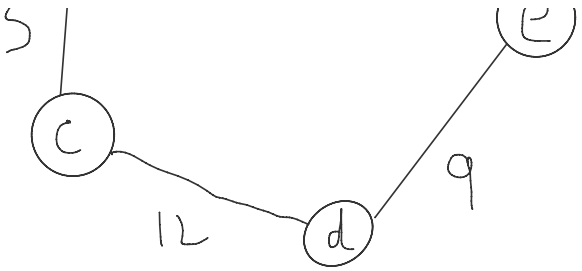

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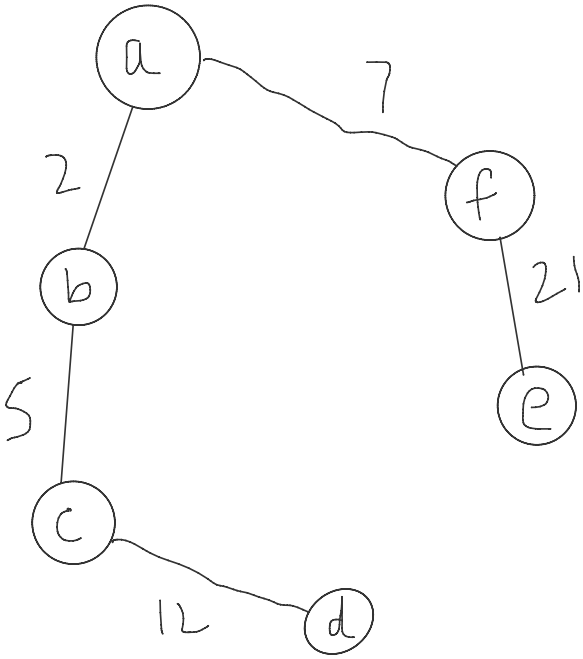

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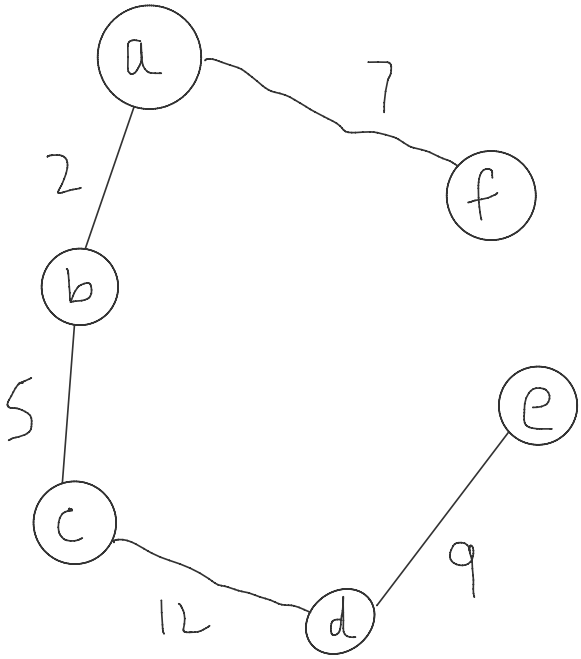

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A Spanning Tree of a connected, undirected, weighted graph G is a subset/subgraph of G(V,E), called ST(V',E'), such that V'=V and E' is a subset of E.

GENERIC-MST(G, w)

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1  A = ∅
2  while A does not form a spanning tree
3      find an edge (u, v) that is safe for A
4      A = A ∪ {(u, v)}
5  return A
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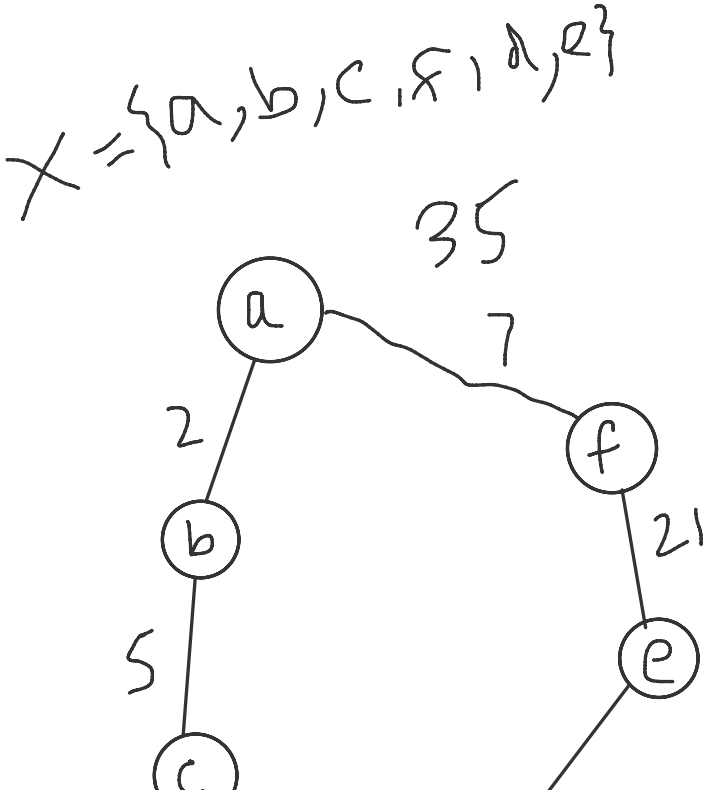

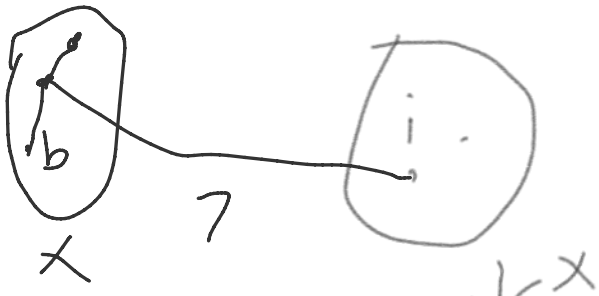

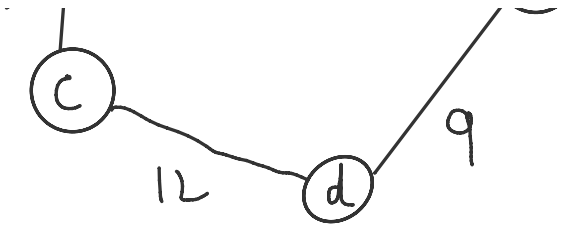

$V = \{a, b, c, d, e, f\}$