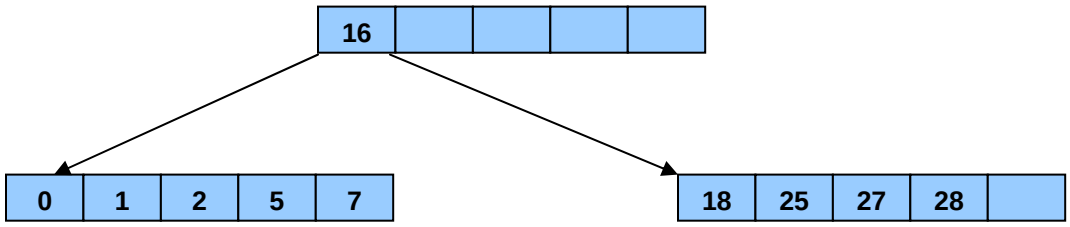
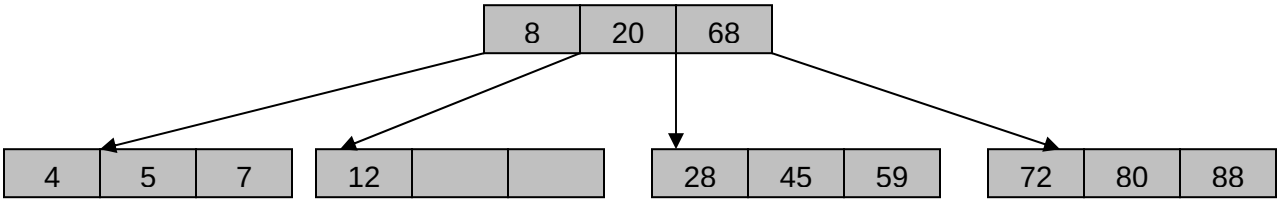
COP 3530 – Final Exam Review Problems – Summer 2005

1. Shown below is a B-Tree of order 6 at some point in time. Show the tree at each time instance after each "access" to the tree in the following "access sequence" occurs.

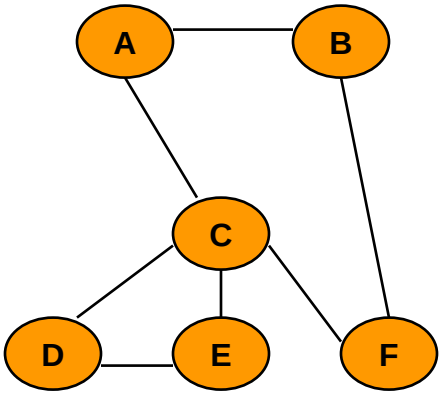
   Access sequence: (insert 4), (insert 30), (insert 24), (delete 18), (delete 24)



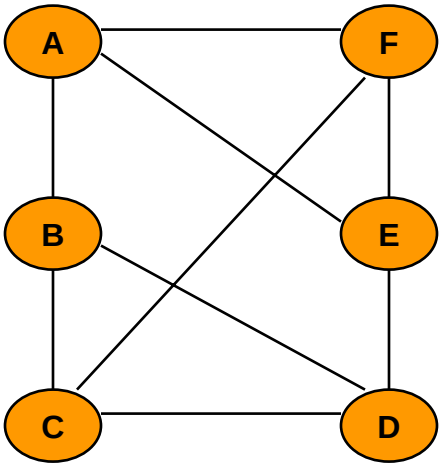
2. For the 2-4 tree shown below, shown the change to the tree that occurs when the key value 34 is inserted into this tree. Explain what happened to the tree when this insert occurred.



3. For each graph shown below, (a) determine if the graph has an Euler circuit and (b) if it does produce one for the graph.

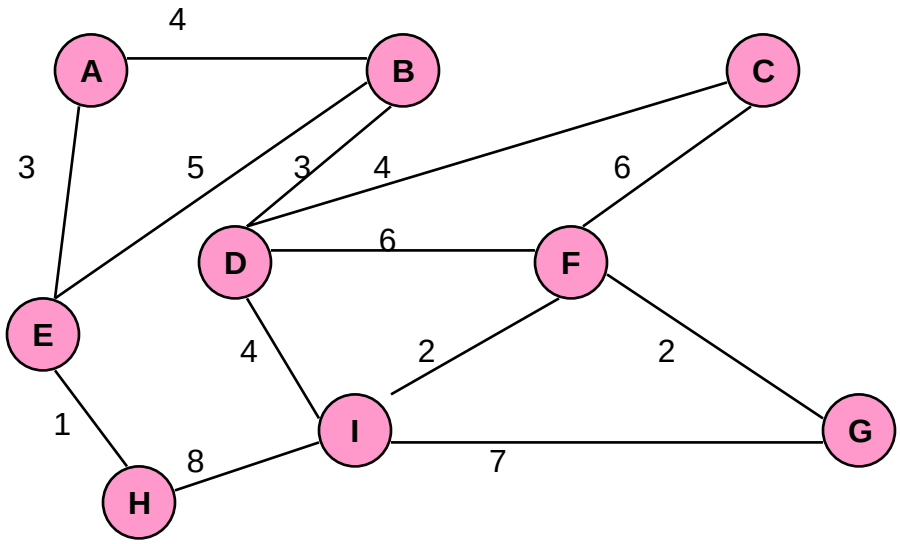


(a)



(b)

4. For the graph shown below, produce the minimum spanning tree for the graph using Prim's algorithm. Assume that the starting node for the spanning tree is node D. Repeat the same problem using Kruskal's and Baruvka's algorithms.



General Review Notes:

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