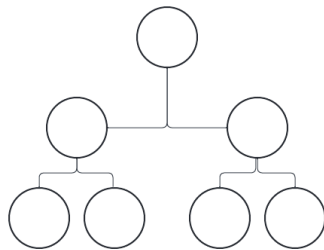


**1.) Identify if the following is a tree or not a tree. Then give your reasons.**

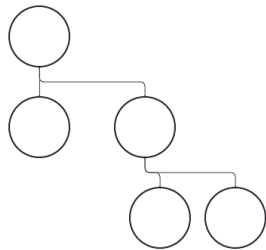
- a. Not a tree, it has a cycle.
- b. A tree, it has no cycle.
- c. Not a tree, it has a cycle.
- d. Not a tree, it has a cycle.
- e. Not a tree, it has a cycle.

**2.) Given the number of vertices, create a tree.**

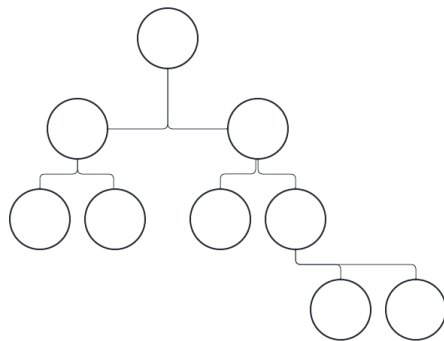
- a. A tree with 7 vertices



- b. A tree with 5 vertices



- c. A tree with 8 vertices

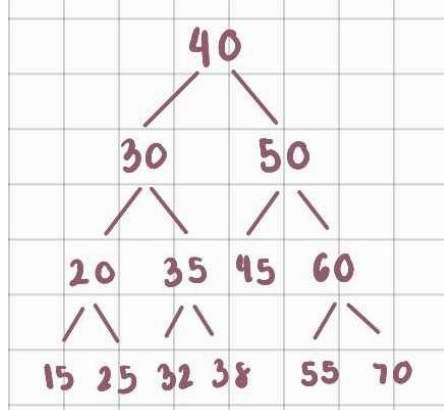


**3.) Solve the number of edges given the number of vertices.**

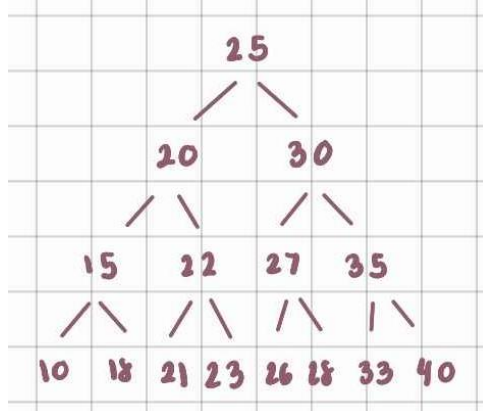
- a. A tree with 10 vertices. How many edges does this tree have?  **$10 - 1 = 9$**
- b. A tree with 12 vertices. How many edges does this tree have?  **$12 - 1 = 11$**
- c. A tree with 15 vertices. How many edges does this tree have?  **$15 - 1 = 14$**

4.) Given the following nodes of a binary tree, rearrange these nodes to form a binary search tree (BST). Draw your tree.

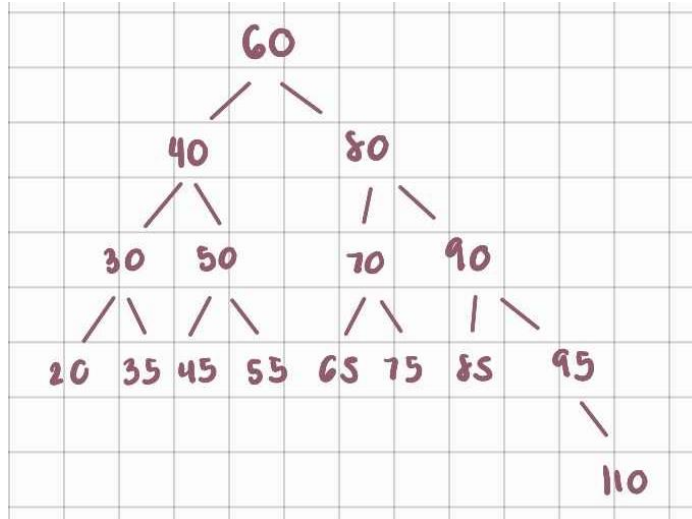
a. 40,30,50,20,35,45,60,15,25,32,38,55,70



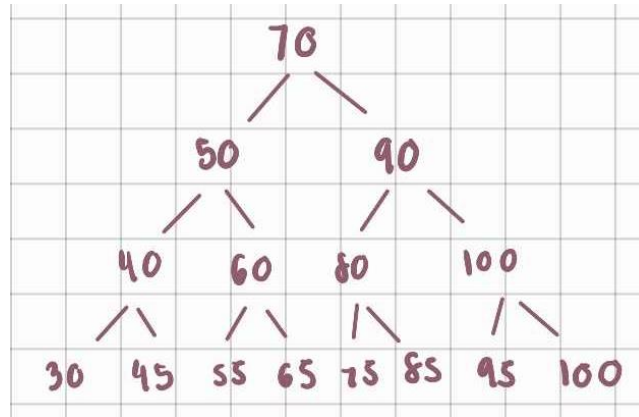
b. 25,20,30,15,22,27,35,10,18,21,23,26,28,33,40



c. 60,40,80,30,50,70,90,20,35,45,55,65,75,85,100

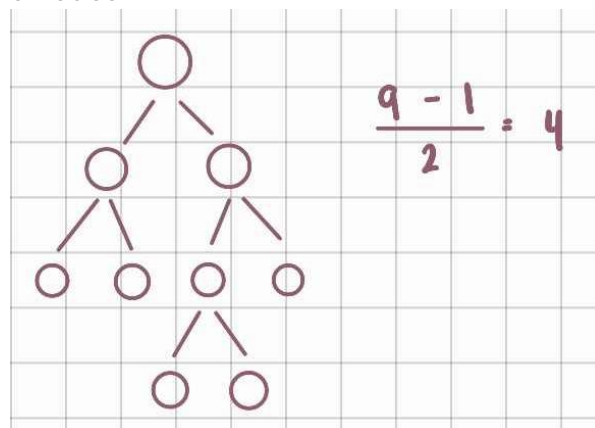


d. 70,50,90,40,60,80,100,30,45,55,65,75,85,95,110

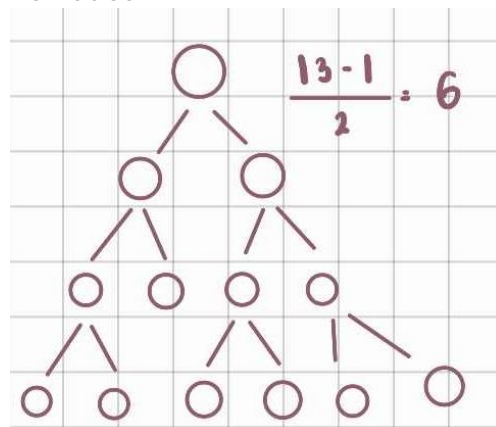


5.) Compute the number of internal nodes of the following full binary trees given the nodes, then draw your trees.

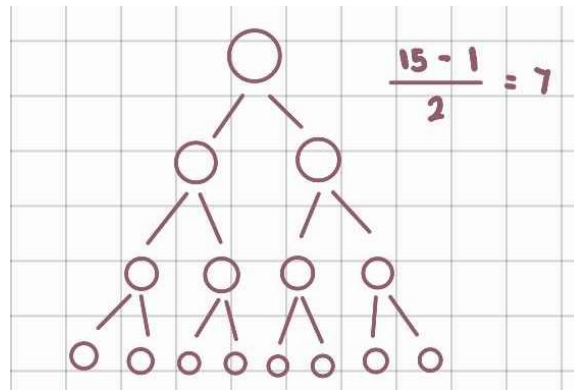
a. 9 nodes



b. 13 nodes



c. 15 nodes



d. 17 nodes

