2) (5 pts) ALG (Heaps)

The array below shows the storage of a **Min-Heap** in the ***middle*** of an insert operation.

(a) (1 pt) What was the element that was in the process of being inserted?

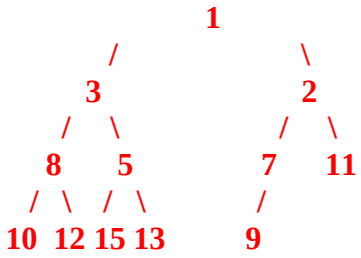
(b) (4 pts) Draw a picture of the heap as a balanced binary tree ***after*** the completion of the insertion of the item.

Note that Index 0 is not shown, because the root of the Heap is at index 1.

Index	1	2	3	4	5	6	7	8	9	10	11	12
Heap Value	1	3	7	8	5	2	11	10	12	15	13	9

Element in the process of being inserted: **2 (Grading: 1 pt all or nothing)**

Picture of the heap as a balanced binary tree ***after*** insertion is complete:



Grading: 1 pt for (1,3,2), 2 pts for (8, 5, 7), 1 pt for (rest). If lots incorrect but heap property maintained, 2 pts total, If heap property isn't maintained 0 pts total