**Heap Lab**

a) (4)Show the array representation for the following **max** heap:

45

33

18

2

1

13

15

3

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 45 | 33 | 18 | 13 | 1 | 2 | 15 | 3 |  |  |  |

b) (8) Show the **ARRAY** and **TREE** after inserting 26, 57, 42, and then 35.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 57 | 45 | 35 | 26 | 42 | 8 | 15 | 3 | 13 | 1 | 33 | 2 |  |  |  |

57

26

35

45

8

42

15

33

13

2

1

3

c) (8) Start with the ORIGINAL array from part a and show the heap **ARRAY** and **TREE** after removing the maximum three times.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 15 | 13 | 2 | 3 | 1 |  |  |  |  |  |  |

3

1

2

13

15