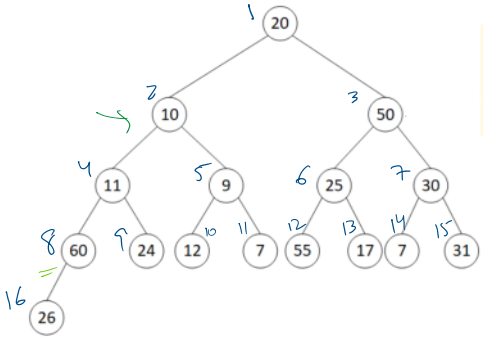
Q3b Part 2

Monday, 29 April 2024 7:17 PM

Part 2 Consider the complete binary tree below. Answer the following questions.




```
BUILD-MAX-HEAP(A, n)
1  A.heap-size = n
2  for i = ⌊n/2⌋ downto 1
3      MAX-HEAPIFY(A, i)
```

n = 16

$\lfloor \frac{16}{2} \rfloor = 8$

for i = 8 downto 1

MAX heapify (A, i)

→ MAX H (A, 8) ×

→ MAX H (A, 7) 31 ↔ 30

→ MAX H (A, 6) 55 ↔ 25

⋮

MAX H (A, 1) ←

(b) In the process of building a **Max-Heap Tree**, the first swap is between 31 and 30 (write down the two numbers). **[2 marks]**

(c) And the second swap is between 55 and 25 (write down the two numbers). **[2 marks]**

(d) Draw the finished Max-Heap Tree (intermediate work is not required). **[6 marks]**