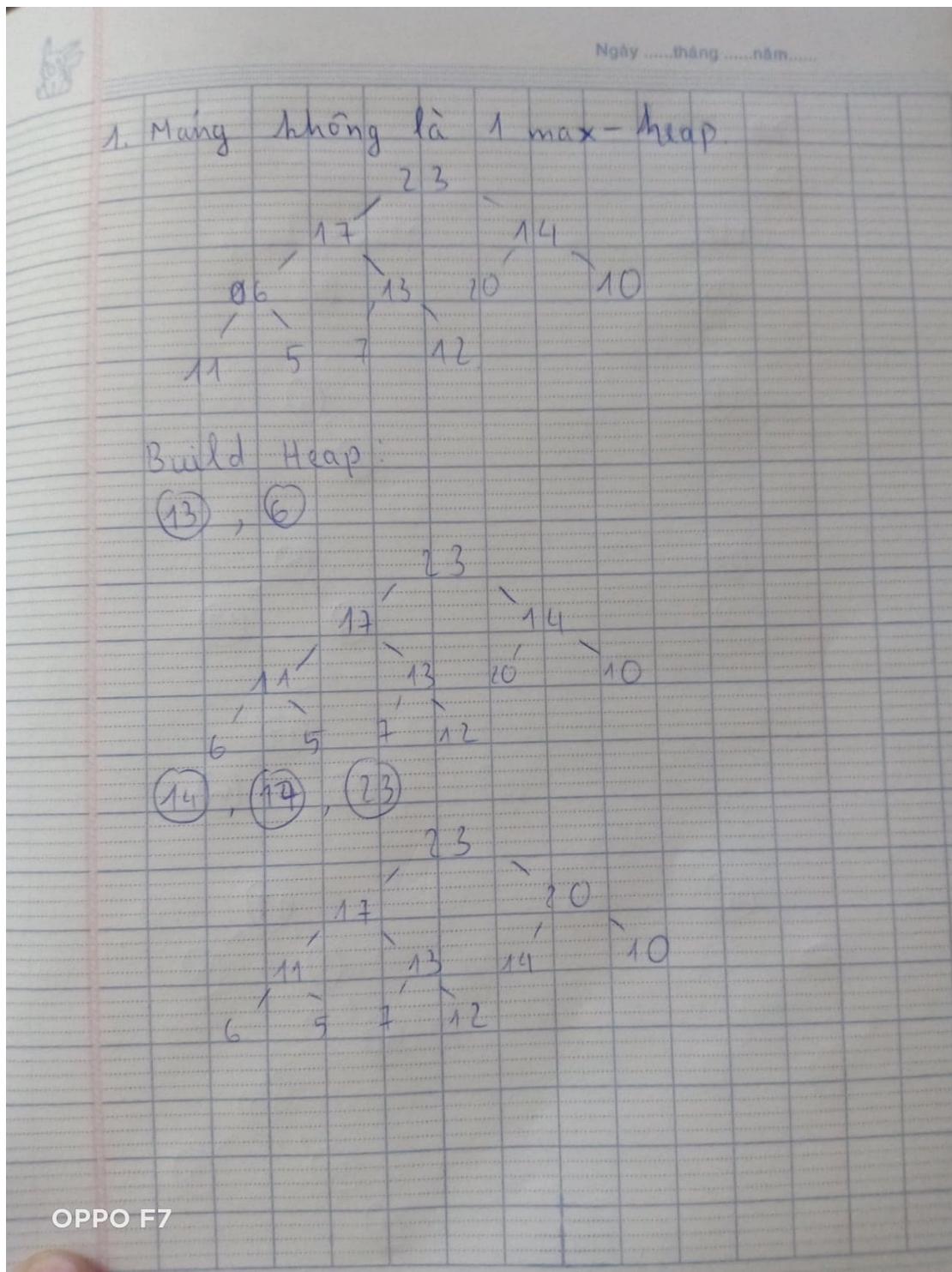


Tutorial Heap

Võ Phi Trường
1814582



28.

2.

Thứ:

(5)

(3)

(17)

(10)

TP

OPPO F7

Max - heap:

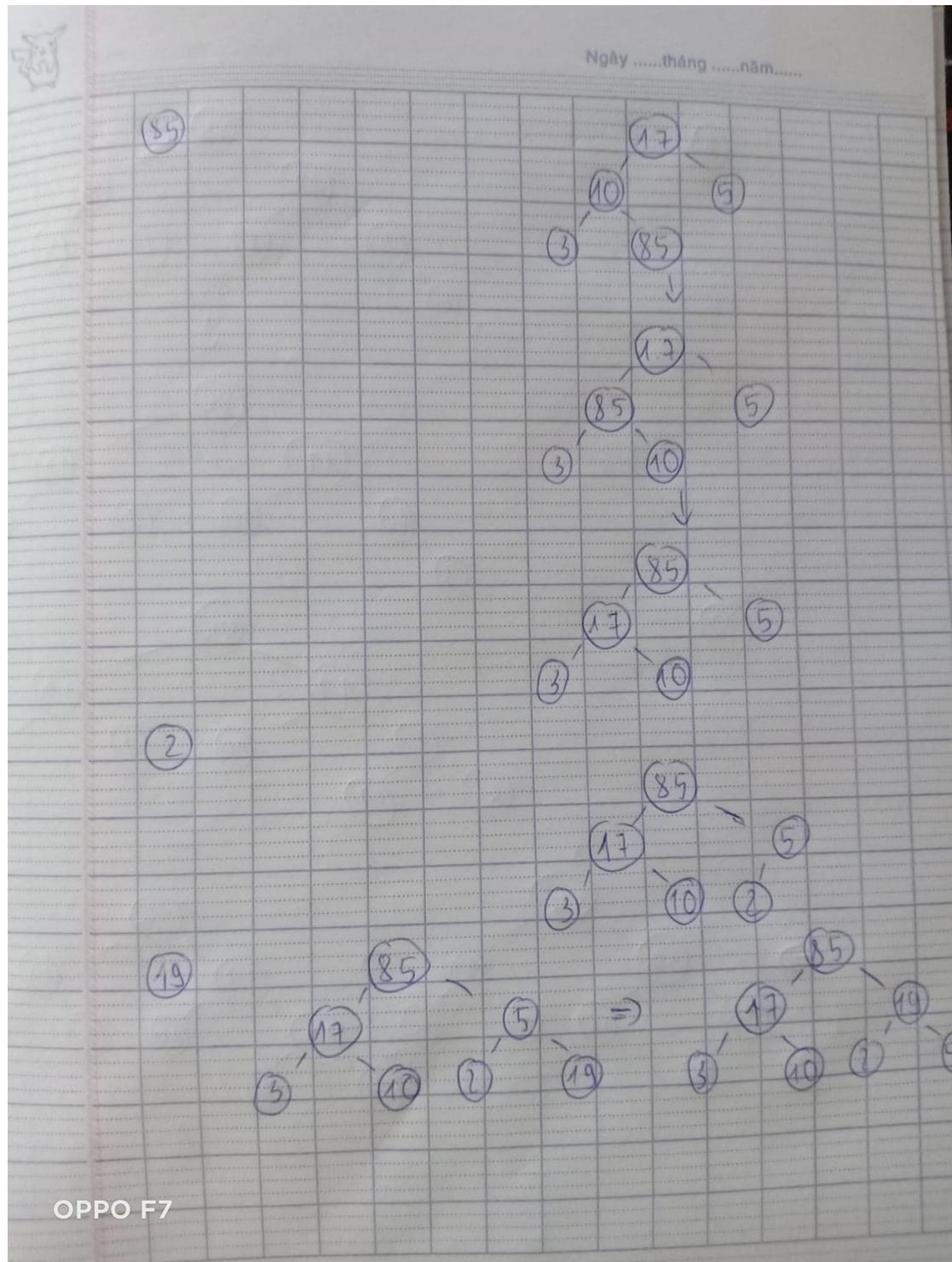
(5)

(3) / (5)

(3) / (5)
↓
(17)

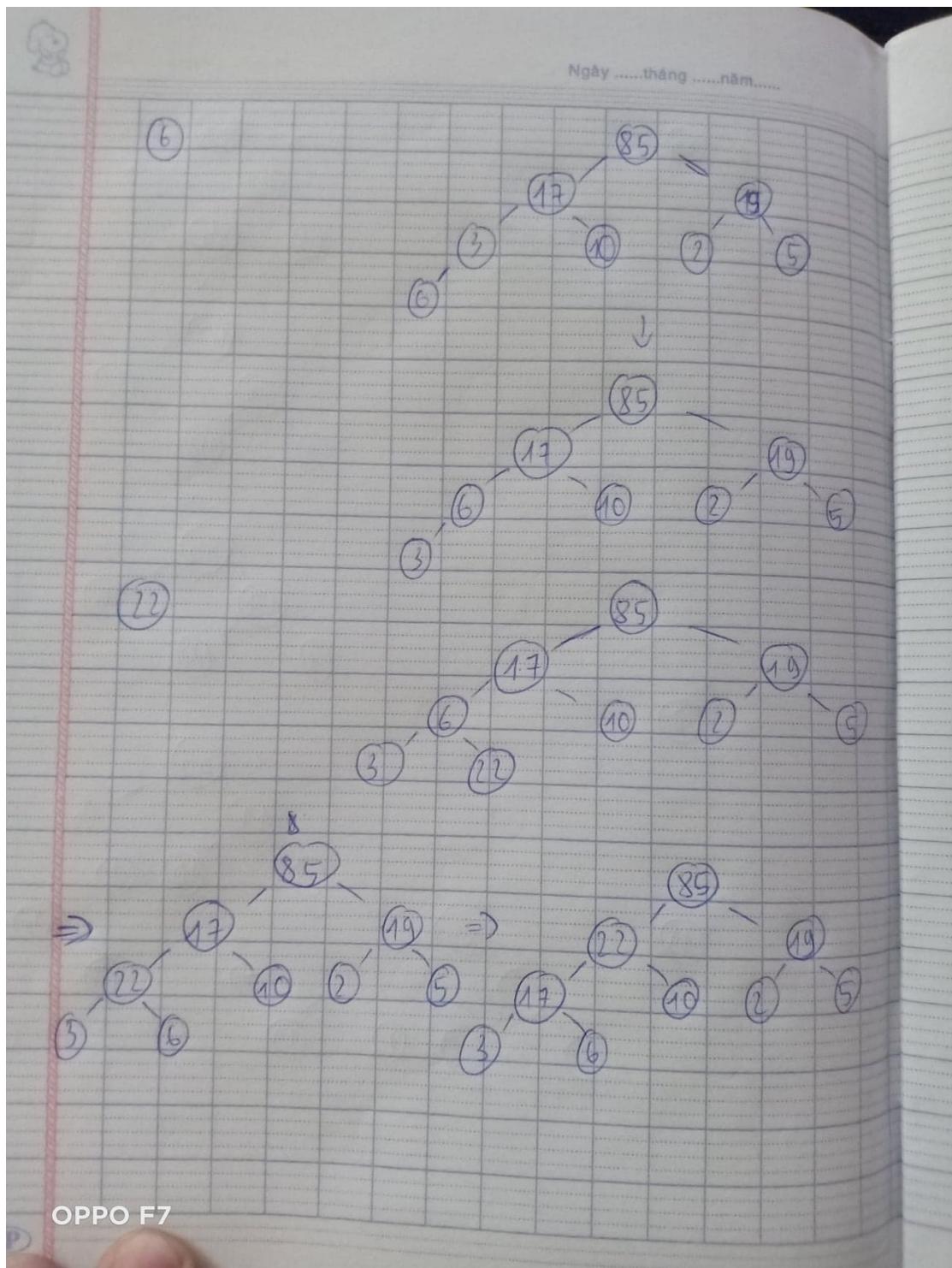
(3) / (17)
(5)

(10) / (17)
(3) / (5)
↓
(17)
(10) / (5)
↓
(3)





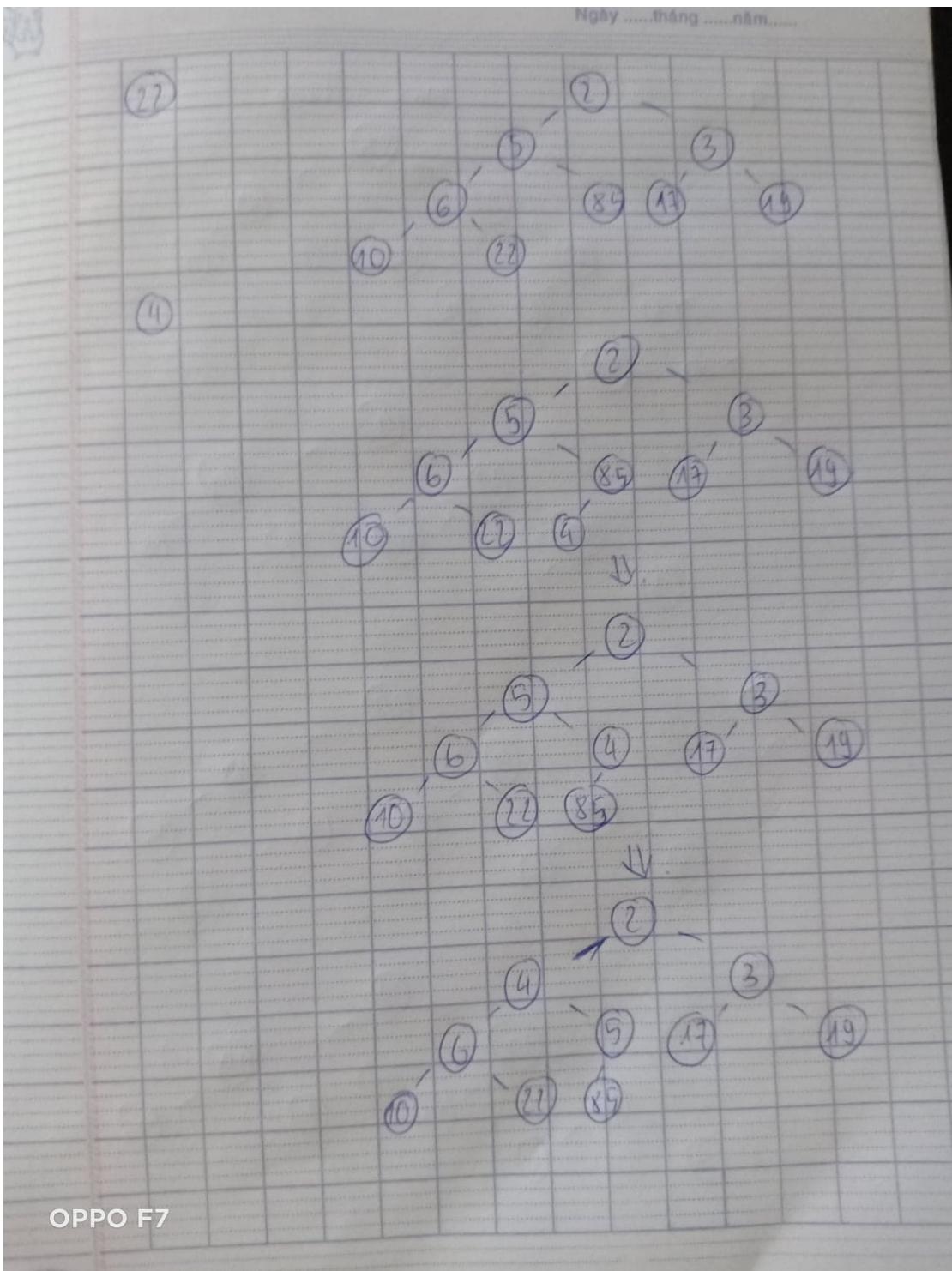
Ngày tháng năm



OPPO F7

OPPO F7

Ngày tháng năm.....

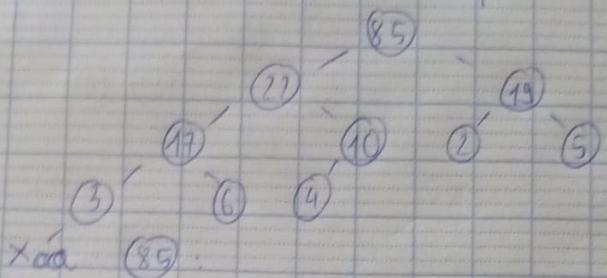


OPPO F7

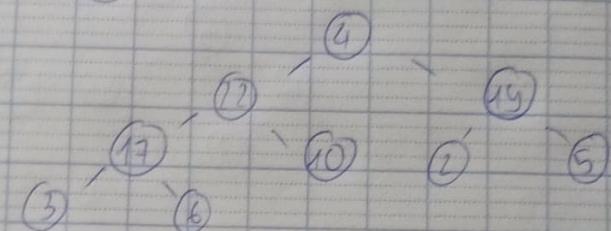
Ngày tháng năm

9

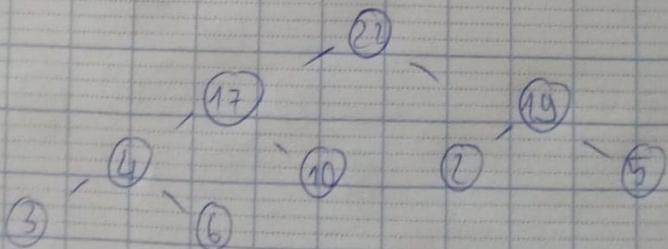
Max - heap:



=>

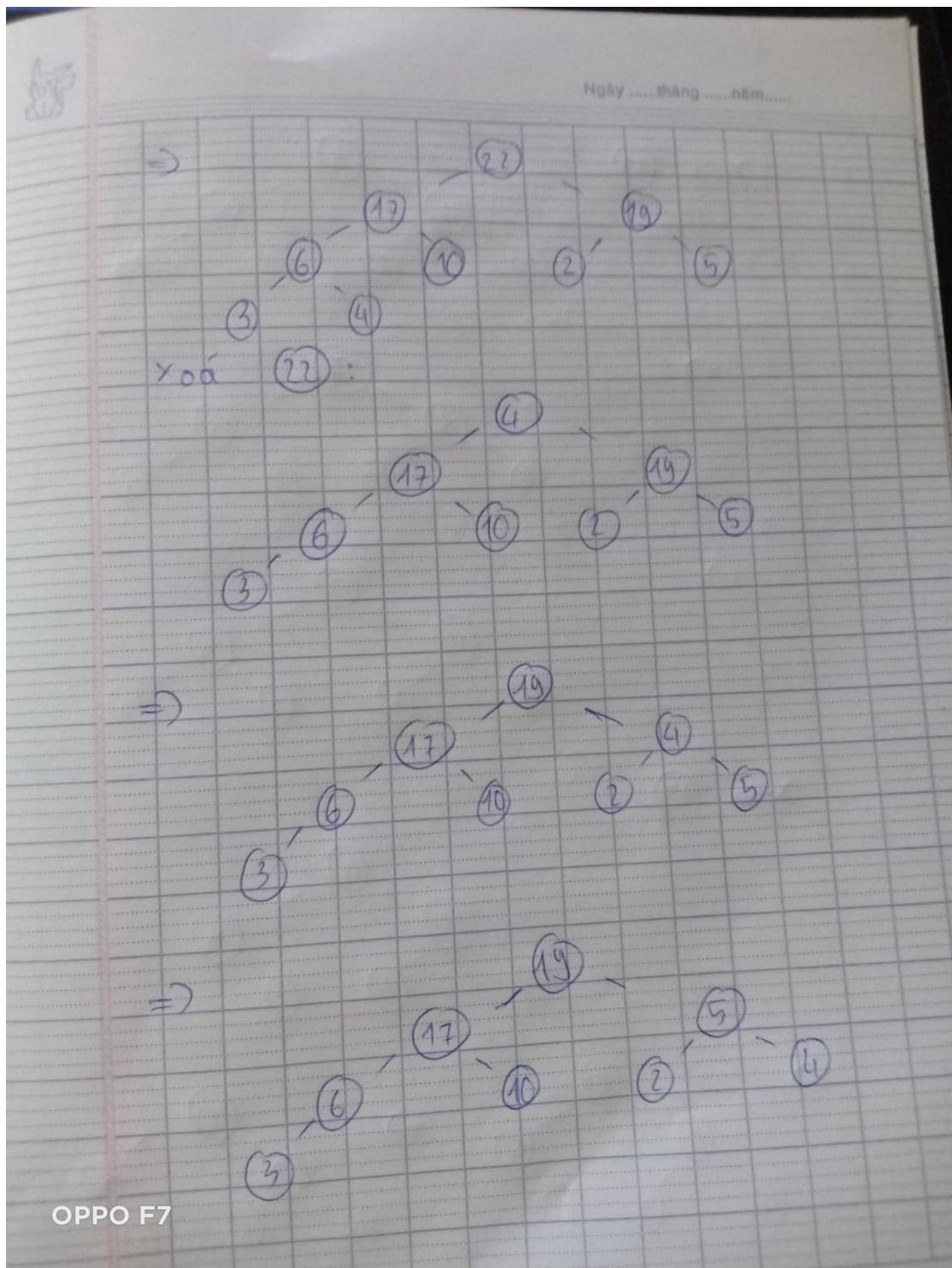


=>



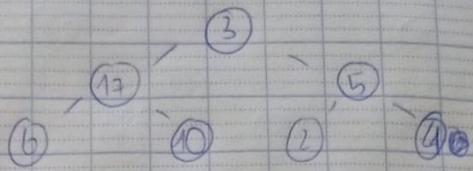
OPPO F7

Ngày tháng năm

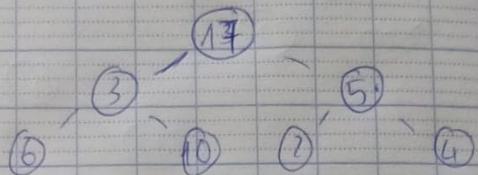


Ngày tháng năm

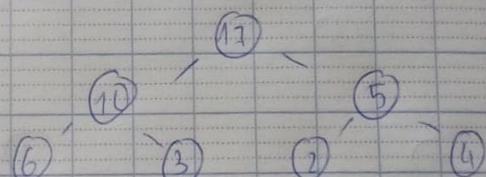
xoá (19) :



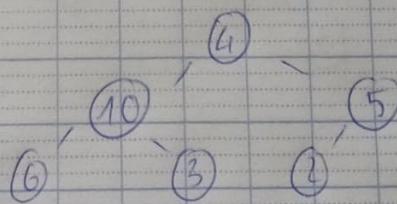
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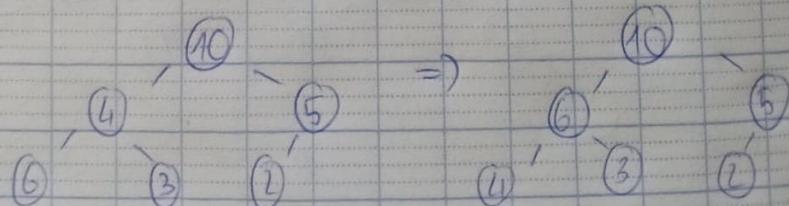
=>



xoá (17) :



=>



OPPO F7
TP

Ngày tháng năm

5: Mảng: 23, 17, 20, 11, 13, 14, 10, 6, 5, 7, 12

Unsorted

$\Rightarrow \cancel{20, 17, 12, 11, 13, 14, 10, 6, 5, 7} | \cancel{12, 23}$

$\Rightarrow \cancel{17, 12, 11, 13, 14, 10, 6, 5, 7} | 23$

$\Rightarrow \cancel{17, 13, 14, 11, 7, 12, 10, 6, 5} | 20, 23$

$\Rightarrow \cancel{14, 13, 12, 11, 7, 5, 10, 6} | 17, 20, 23$

$\Rightarrow \cancel{13, 11, 12, 6, 7, 5, 10} | 14, 17, 20, 23$

$\Rightarrow \cancel{12, 11, 10, 6, 7, 5} | \cancel{13, 14, 17, 20, 23}$

$\Rightarrow \cancel{11, 7, 10, 6, 5} | \cancel{12, 13, 14, 17, 20, 23}$

$\Rightarrow \cancel{10, 7, 5, 6} | \cancel{11, 12, 13, 14, 17, 20, 23}$

$\Rightarrow \cancel{7, 6, 5} | \cancel{10, 11, 12, 13, 14, 17, 20, 23}$

$\Rightarrow \cancel{6, 5} | \cancel{7, 10, 11, 12, 13, 14, 17, 20, 23}$

$\Rightarrow \cancel{5} | \cancel{6, 7, 10, 11, 12, 13, 14, 17, 20, 23}$

$\Rightarrow \cancel{5, 6, 7, 10, 11, 12, 13, 14, 17, 20, 23}$

OPPO F7

6.

- Heap sort không có tính ổn định.

- Khi Heap sort tăng dần, ta xóa phần tử tại index = 0 và đặt nó vào cuối mảng, làm mất tính ổn định của heap.

- Ví dụ: 5(a), 5(b), 3. Sau khi Heap sort: 3, 5(b), 5(a).