

Bài 2.

a) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

② Selection sort:

Turn 1 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
 ↓
 min-value

Turn 2 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
 ↓
 min-value

- - - - - .

Turn 9 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
 ↓
 minvalue.

↳ ③ Bubble sort

Turn 1 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

⇒ Done, sorted

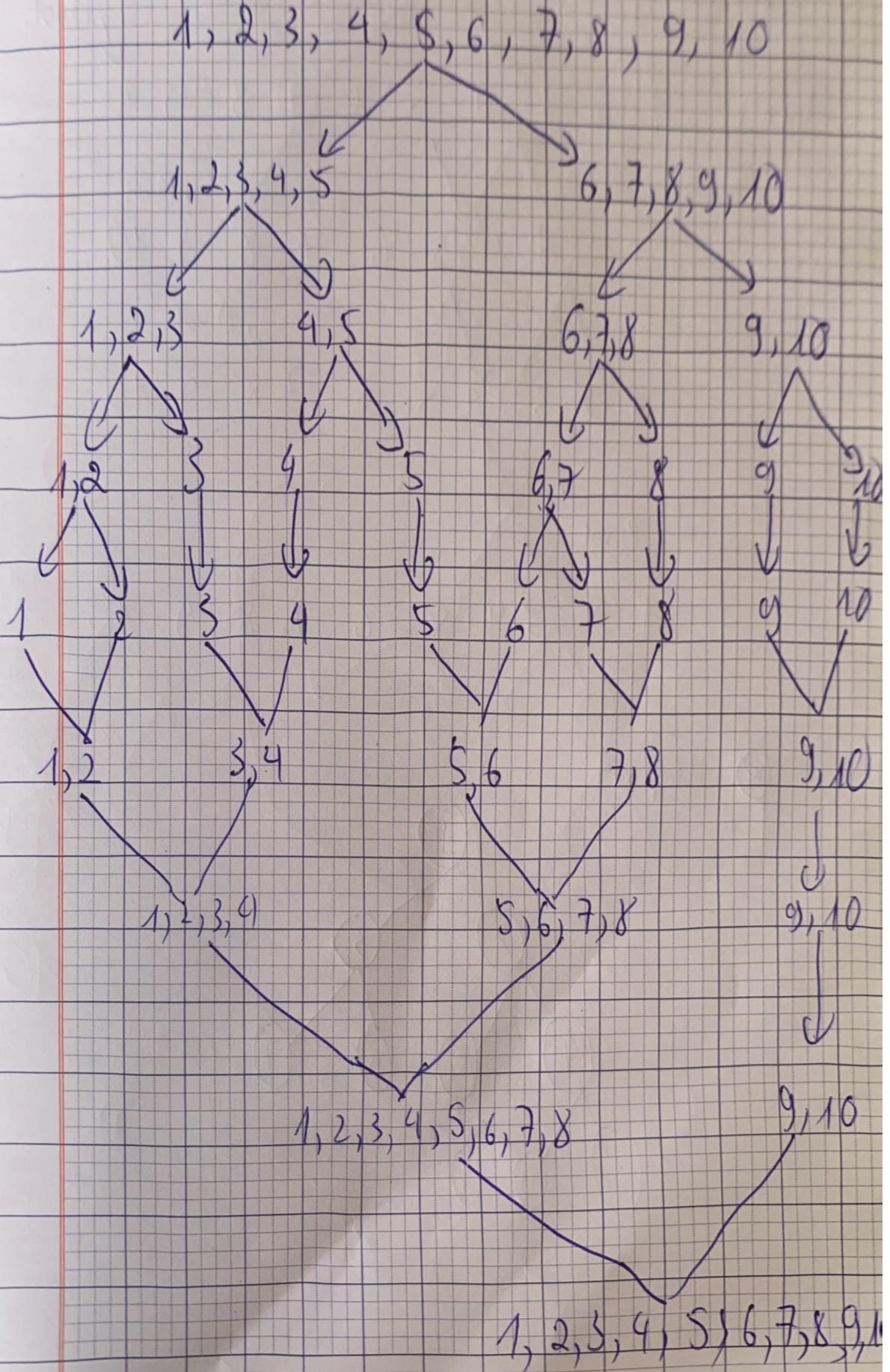
④ Insertion sort:

Turn 1. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Turn 2. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
 - - - - -

Turn 9 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

(*) Merge Sort





⑧ Quick Sort

Turn 1

1 2 3 9 5 6 7 8 9 10

Pivot
↓

Turn 2

1 2 3 4 5 6 7 8 9 10

Pivot
↓

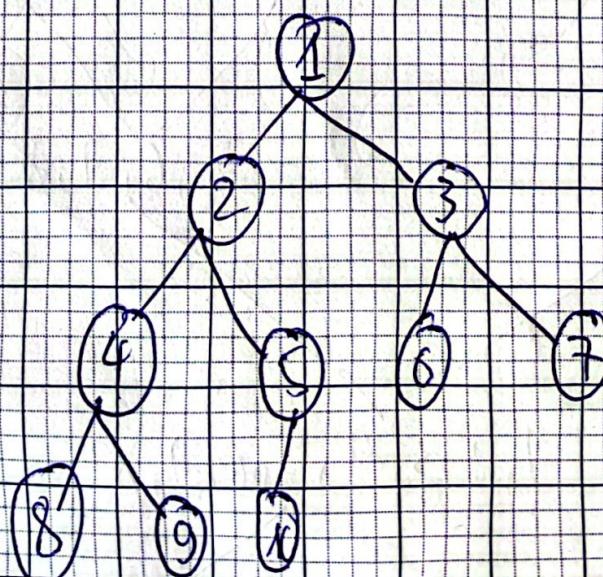
1 2 3 9 5 6 7 8 9 10

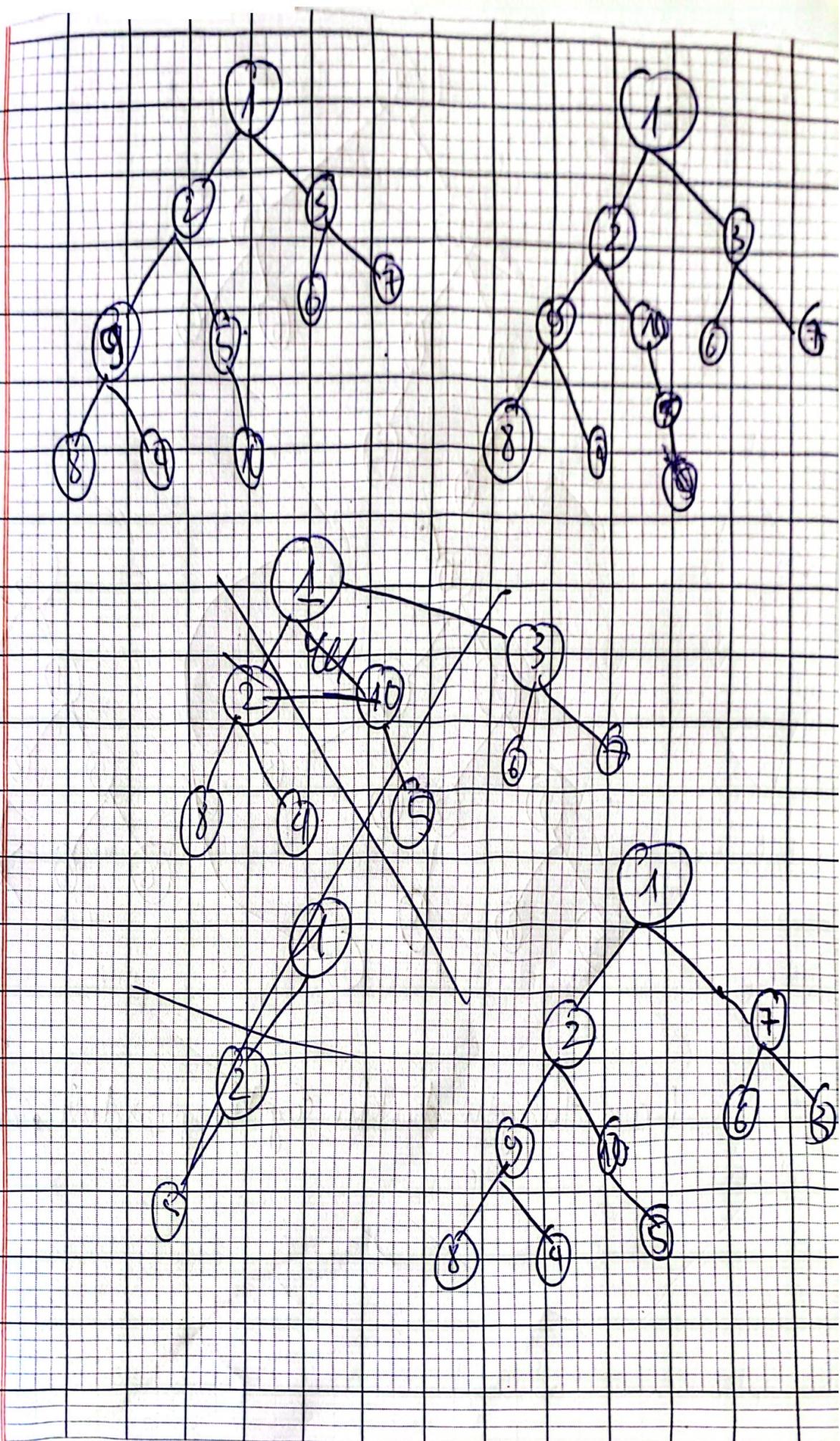
Pivot
↓

Pivot
↓

1 2 3 4 5 6 7 8 9 10

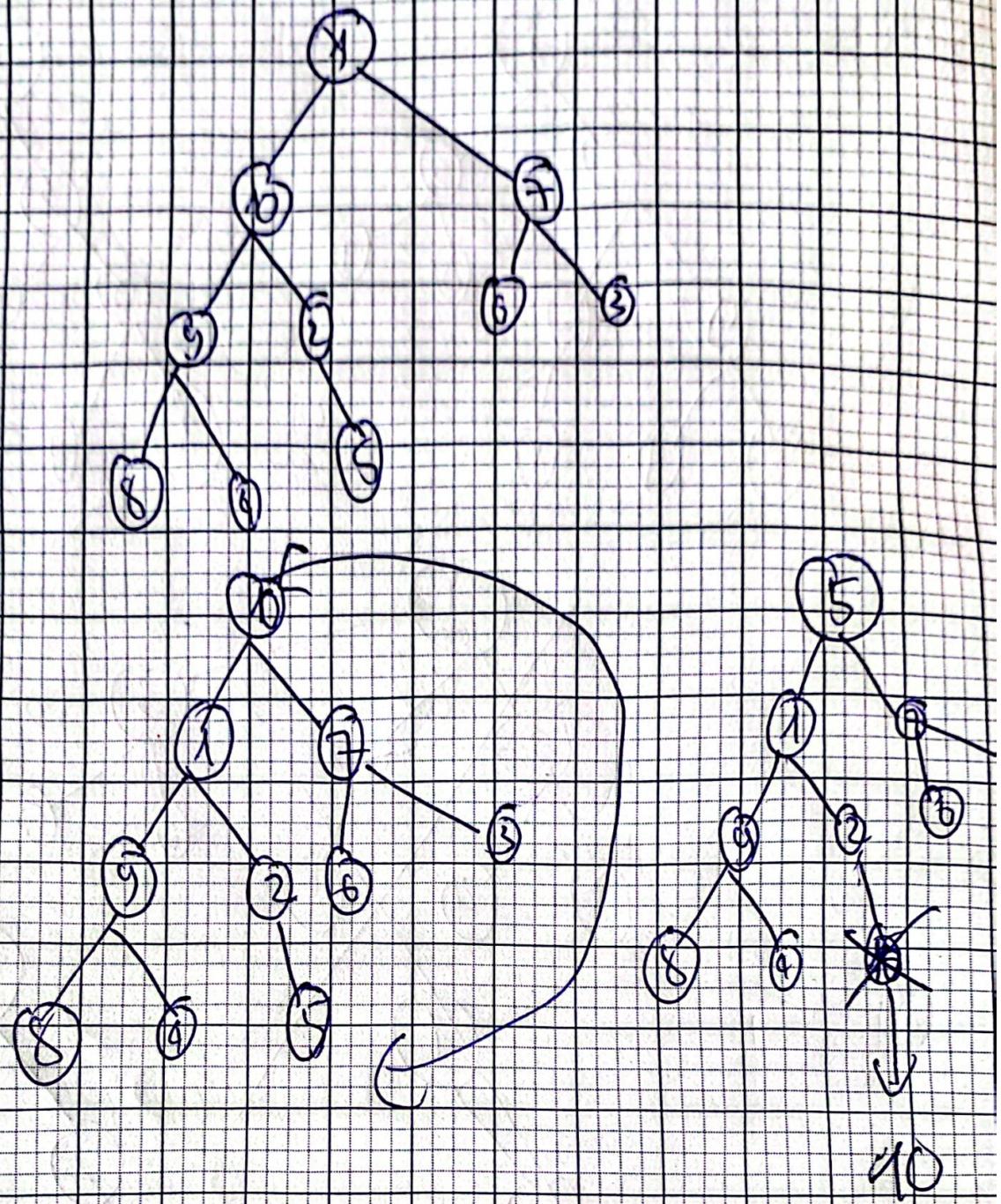
⑨ Heap sort





Giấy trắng tự nhiên chống lóa - mồi mắt.





Giấy trắng tự nhiên chống lóa - mồi mắt.



③ Radix sort

10

1 2 3 9 5 6 7 8 9

10

1 2 3 4 5 6 7 8 9

10

b) 10, 9, 8, 7, 6; 5, 4, 3, 2, 1

⑧ Selection sort.

Turn 1. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

min value.

$\rightarrow 1, \cancel{10}, 9, \dots$

min value

Turn 2 $\Rightarrow 1, \cancel{10}, 9, 8, 7, 6, 5, 4, 3, 2$

Turn

Turn 3 $\Rightarrow 1, 2, \cancel{10}, 9, 8, 7, 6, 5, 4, 3$

min Value

Turn 9 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

min value.

⑧ Bubble sort

10, 9, 8, 7, 6, 5, 4, 3, 2, 1

9, 10

8, 10

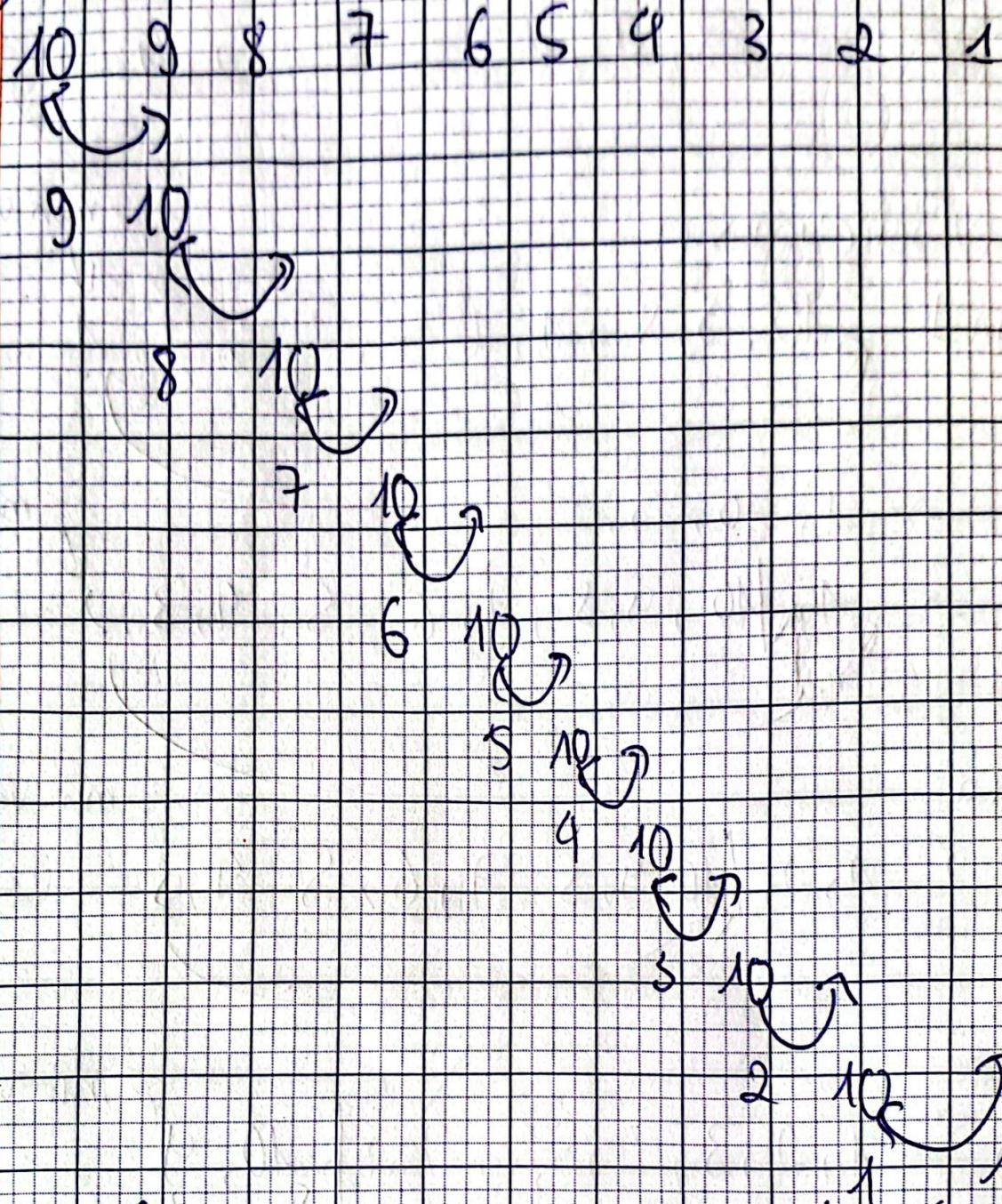
7, 10

6, 10

5, 10



Bubble sort



Turn 2: Lần này turn 1, sau khi đó không có phép đổi nào nữa thì mang đặc biệt xem

nhà thi mang đặc biệt xem

1 2 3 4 5 6 7 8 9 10



② Insertionsort

10 9 8 7 6 5 4 3 2 1

9 10 8 7 6 5 4 3 2 1
10

8 9 10 7 6 5 4 3 2 1

Tuần tự

1 2 3 4 5 6 7 8 9 10

③ Mergesort

10, 9, 8, 7, 6, 5, 4, 3, 2, 1

10, 9, 8, 7, 6

6, 5, 4, 3, 2, 1

10, 9, 8

7, 6

5, 4, 3

2, 1

10, 9

8

7

6

5, 4

3, 2

1, 0

10, 9

8

7

6

5, 4

3, 2

1, 0

9, 10

8, 7, 6

7, 6

6

5, 4

3, 2

1, 0

7, 8, 9, 10

8, 7, 6

7, 6

6

5, 4

3, 2

1, 0

7, 8, 9, 10

8, 7, 6

7, 6

6

5, 4

3, 2

1, 0

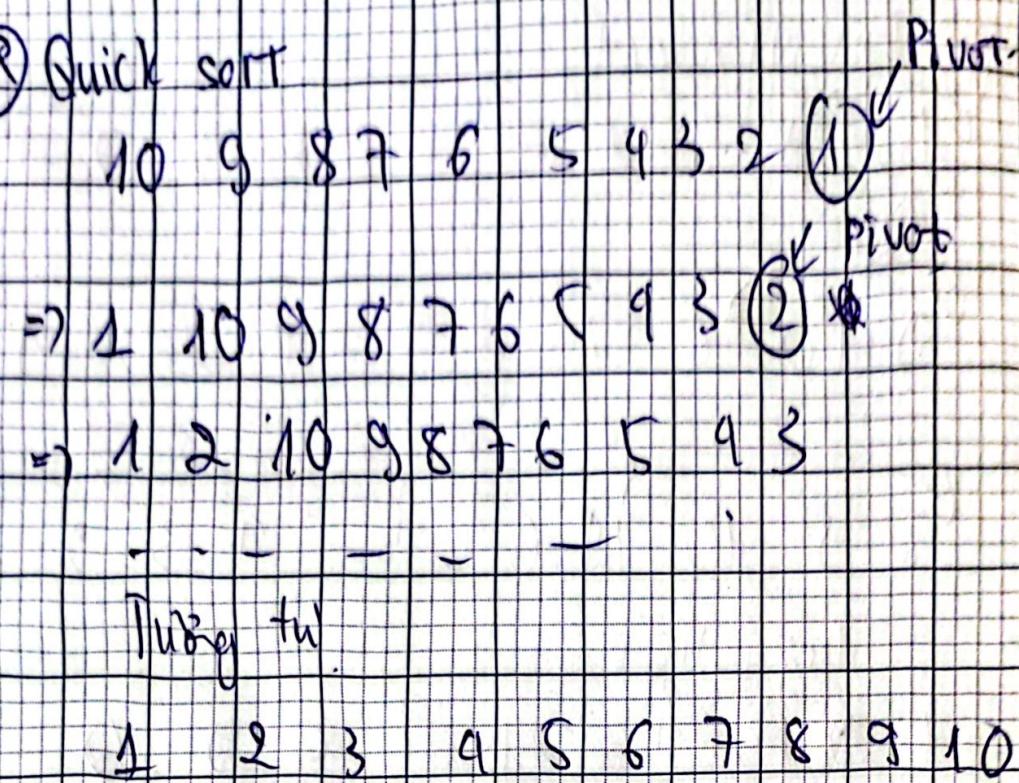
Giấy trắng tự nhiên chống lóa - mới mẻ.

3, 4, 5, 6, 7, 8, 9, 1

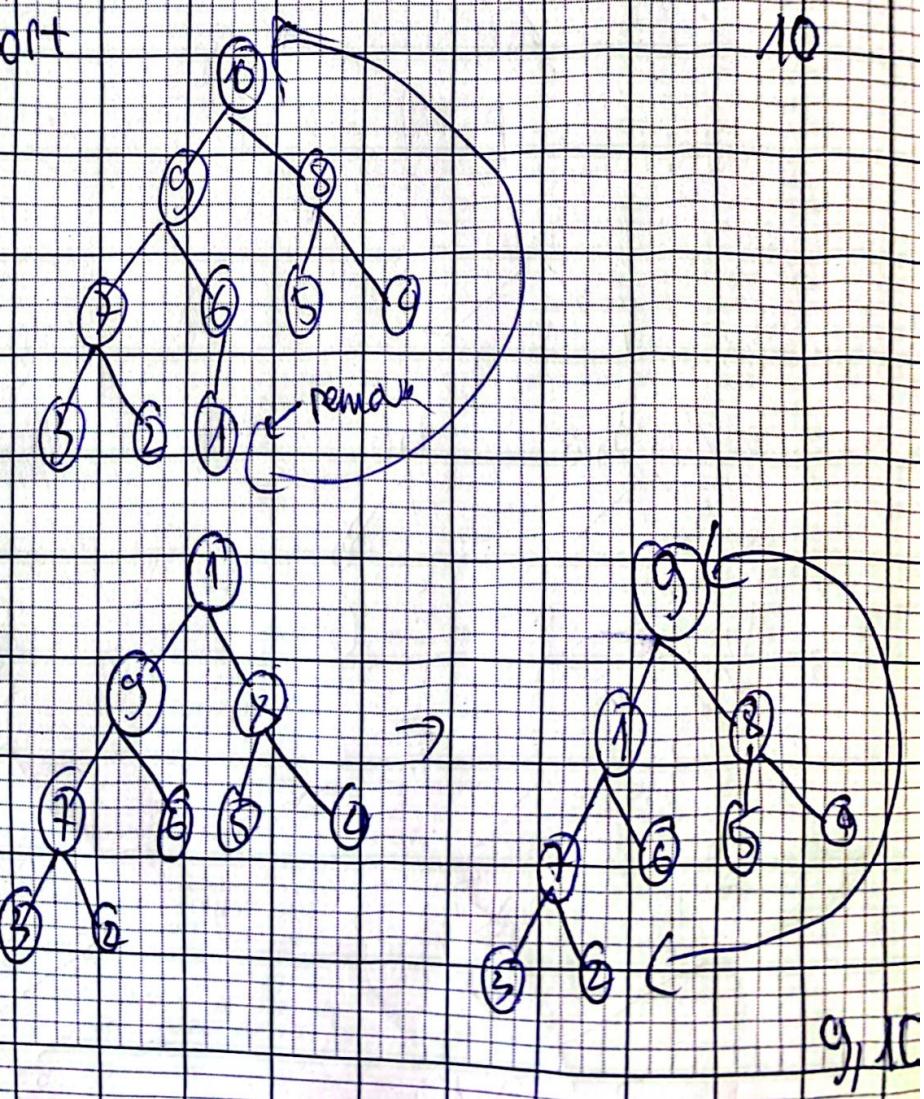




⑧ Quick sort



⑨ Heap sort





Làm tương tự trên khi cây không còn mía nữa

④ Radix sort.

10 9 8 7 6 5 4 3 2 1

~~10~~ ~~9 8 7 6 5 4 3 2 1~~

~~10~~ ~~1 2 3 4 5 6 7 8 9~~

~~1 2 3 4 5 6 7 8 9~~ ~~10~~

C) 9, 10, 1, 2, 3, 4, 5, 6, 7, 8

⑤ Selection Sort

~~1~~ 9 10 2 3 4 5 6 7 8

~~1~~ ~~2~~ 9 10 3 4 5 6 7 8

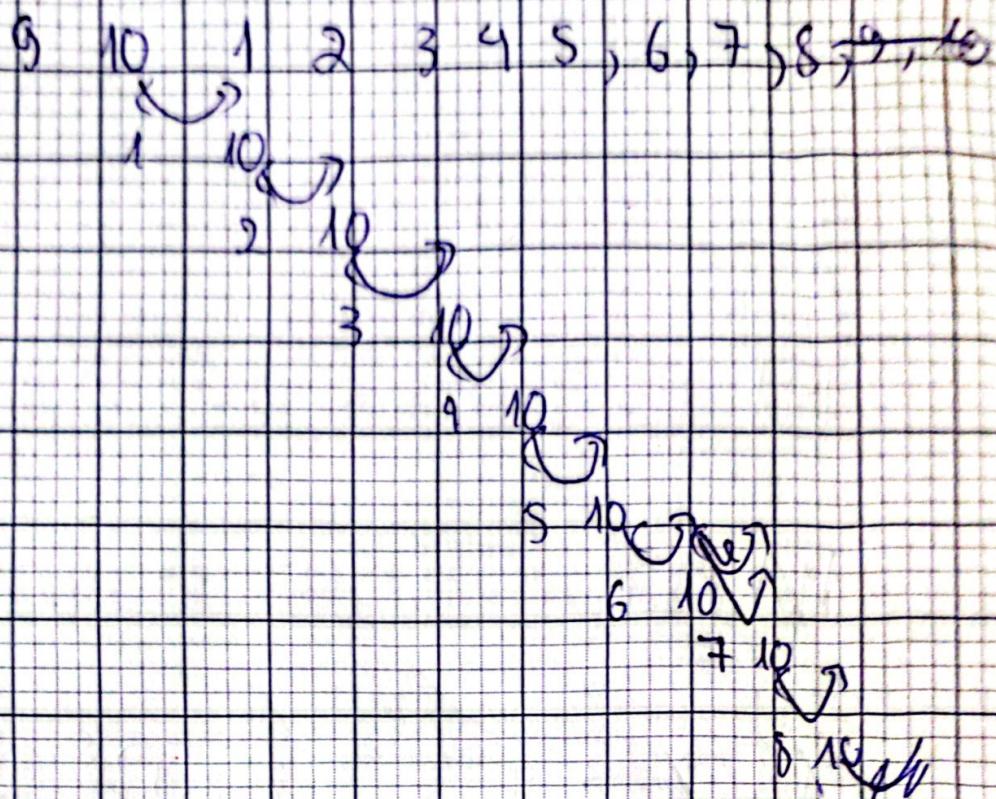
~~1~~ ~~2~~ ~~3~~ 9 10 4 5 6 7 8

Tổng + 2 — —

~~1~~ ~~2~~ ~~3~~ ~~4~~ ~~5~~ ~~6~~ ~~7~~ ~~8~~ ~~9~~ ~~10~~

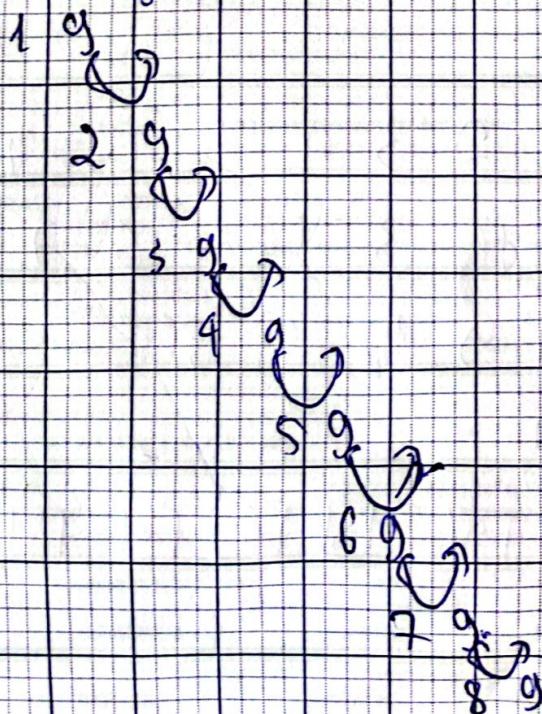


⑧ Bubble sort



=> 9 1 2 3 4 5 6 7 8 10

Làm tương tự



=> 1 2 3 4 5 6 7 8 9 10 → sorted



② Insertion Sort

9 10 1 2 3 4 5 6 7 8

9 10 1 2 3 4 5 6 7 8

9 10 1 2 3 4 5 6 7 8

1 9 10 2 3 4 5 6 7 8

1 2 9 10 3 4 5 6 7 8

1 2 3 9 10 4 5 6 7 8

1 2 3 4 10 5 6 7 8

—

Làm trống từ

1 2 3 4 5 6 7 8 9 10

③ Merge sort

9 10 1 2 3 4 5 6 7 8

9 10 1 2 3

4 5 6 7 8

9 10 1

2 3

4 5 6

7 8

9 10

1 2

4 5

7 8

9 10

1 2

4 5

7 8

9 10

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4 5

7 8

9 10

1 2

4 5

7 8

9 10

1 2

4 5



⑧ Quick sort

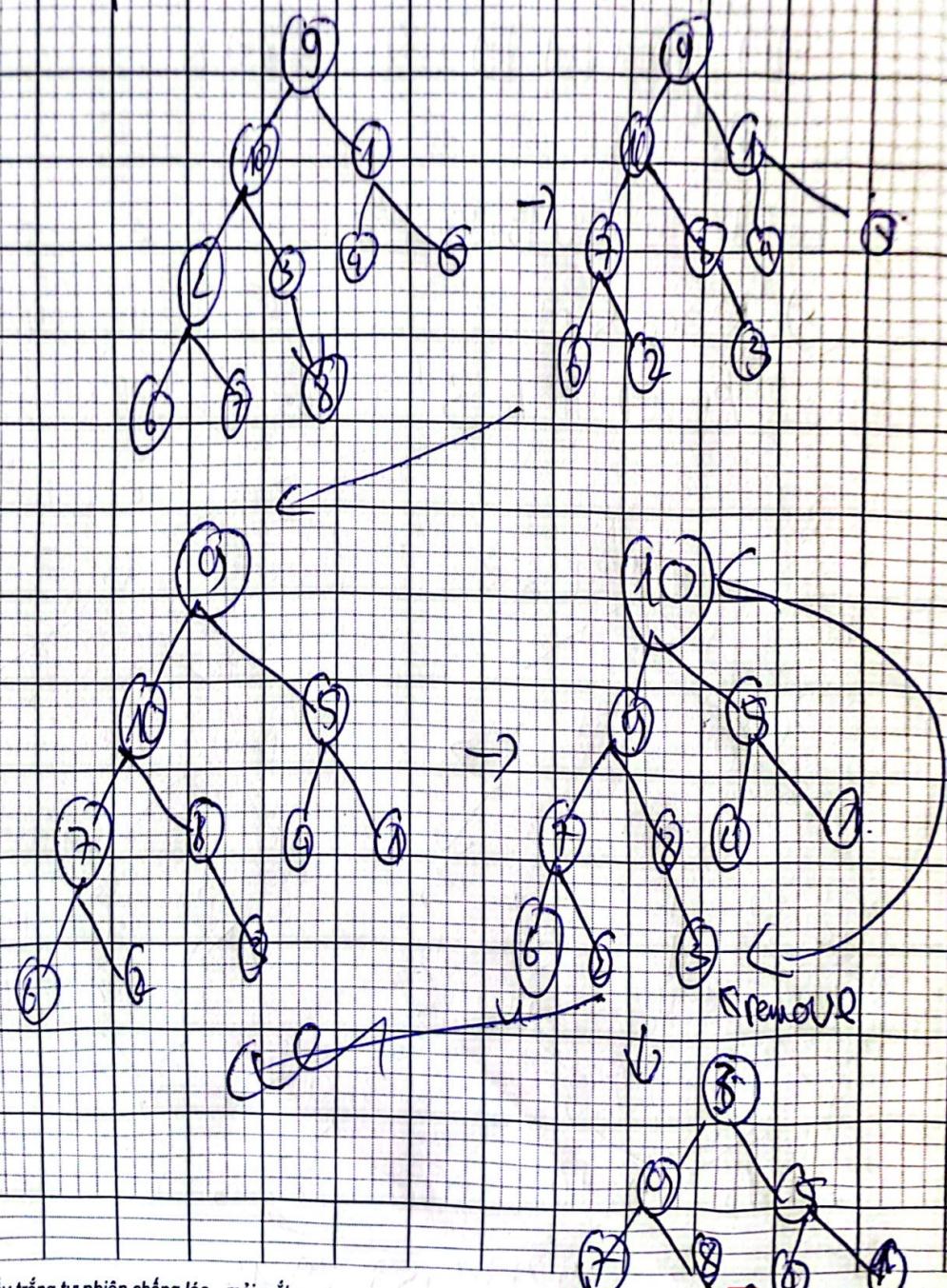
9 10 1 2 3 4 5 6 7 8

=) 1 2 3 4 5 6 7 8 9 10

Pivot

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

~~⑧~~ Heap sort



Giấy trắng tự nhiên chống lóa - mỏi mắt.



Làm thế nào để tên bài này là 'tự phân' (?)

⑧ Radix sort:

Làm thế nào để tự phân trên v 1 dãy có cùng các phần tử như 2 dãy trên chỉ khác thứ tự.

d, 3, 4, 5, 6, 7, 8, 9, 10, 1, 2.

⑨ Selection sort

① 3 9 8 6 7 8 9 10 2.

② ② 3 4 5 6 7 8 9 10

① ② ③ 4 5 6 7 8 9 10

— — — — —

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

⑩ Bubble Sort Insertion Sort

③ 1 4 5 6 7 8 9 10 1, 2

— — — —

③ ④ ⑤ ① ② ⑧ ⑨ ⑩ 1 2

④ ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ 2

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩



Bubble Sort

3 9 5 6 7 8 9 10 11 12
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

3 9 5 6 7 8 9 10 11 12
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

3 9 5 6 7 8 9 10 11 12
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

1 9
2 9

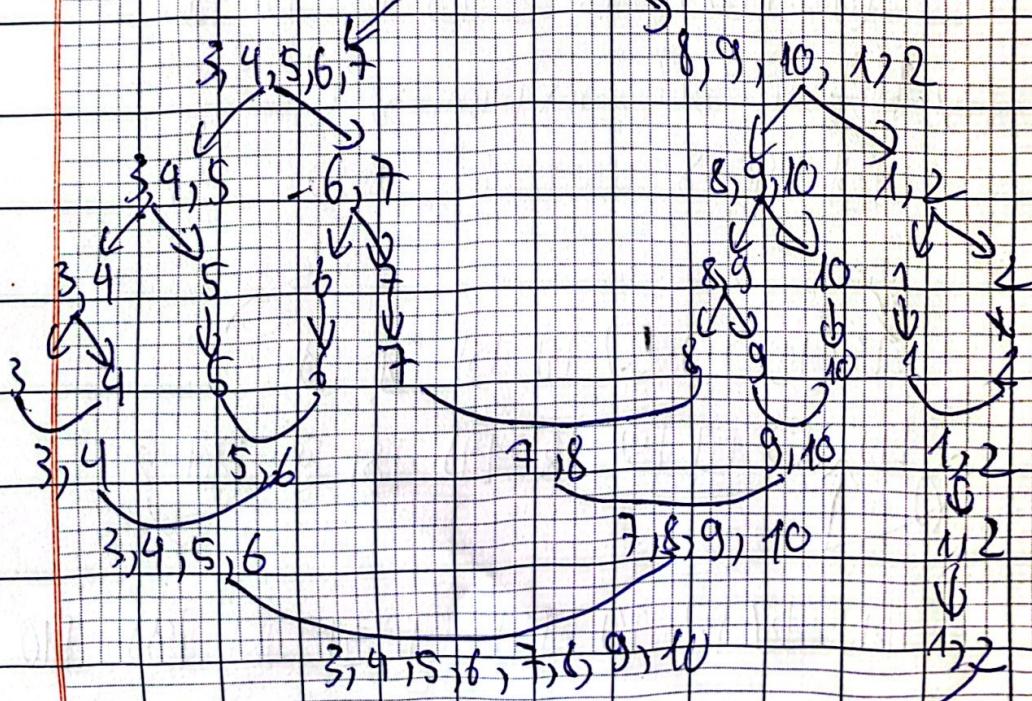
3 9 5 6 7 8 10 11 12
 - - - - -

Làm thường

1 2 3 4 5 6 7 8 9 10

Merge Sort

3, 4, 5, 6, 7, 8, 9, 10, 11, 12

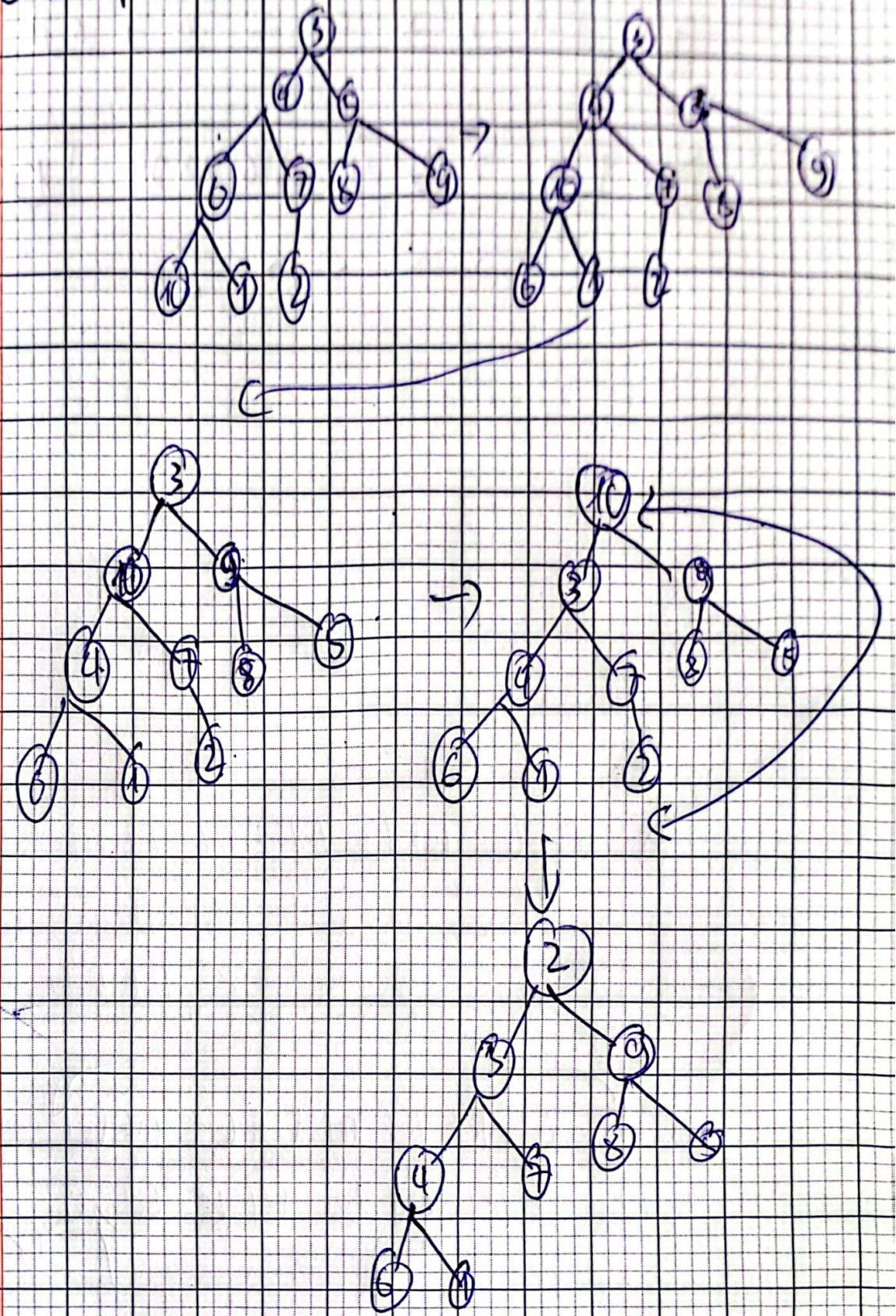


Giấy trắng tự nhiên chống lóa - mới mẻ.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10 ★★★★★



⑧ Heap sort



Làm trống tự động đến khi cây không còn nút nào
Giấy trắng tự nhiên chống lóa mỏi mắt.

