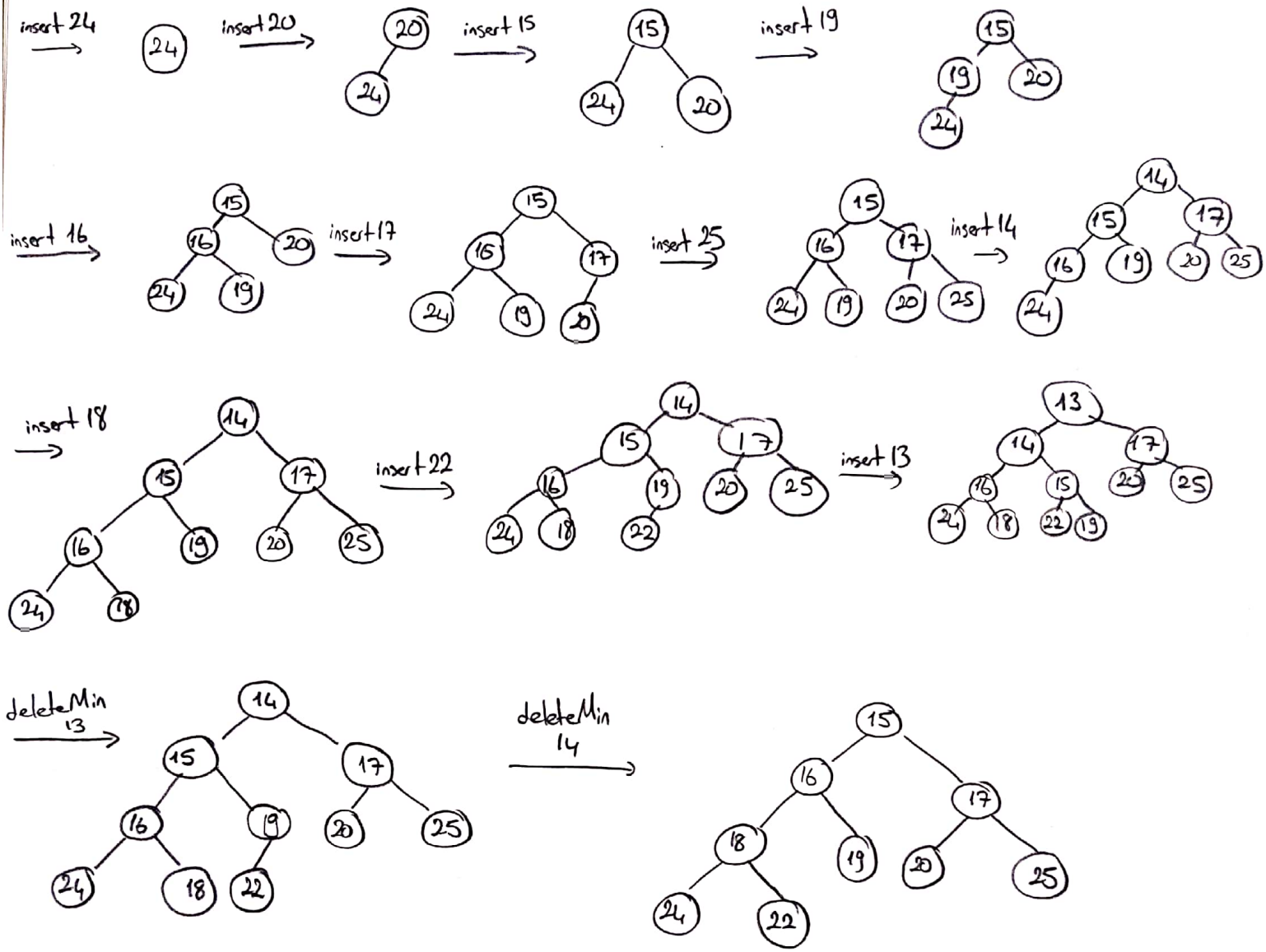
TARIK BUĞRA KARALI 2170393 7

Q1

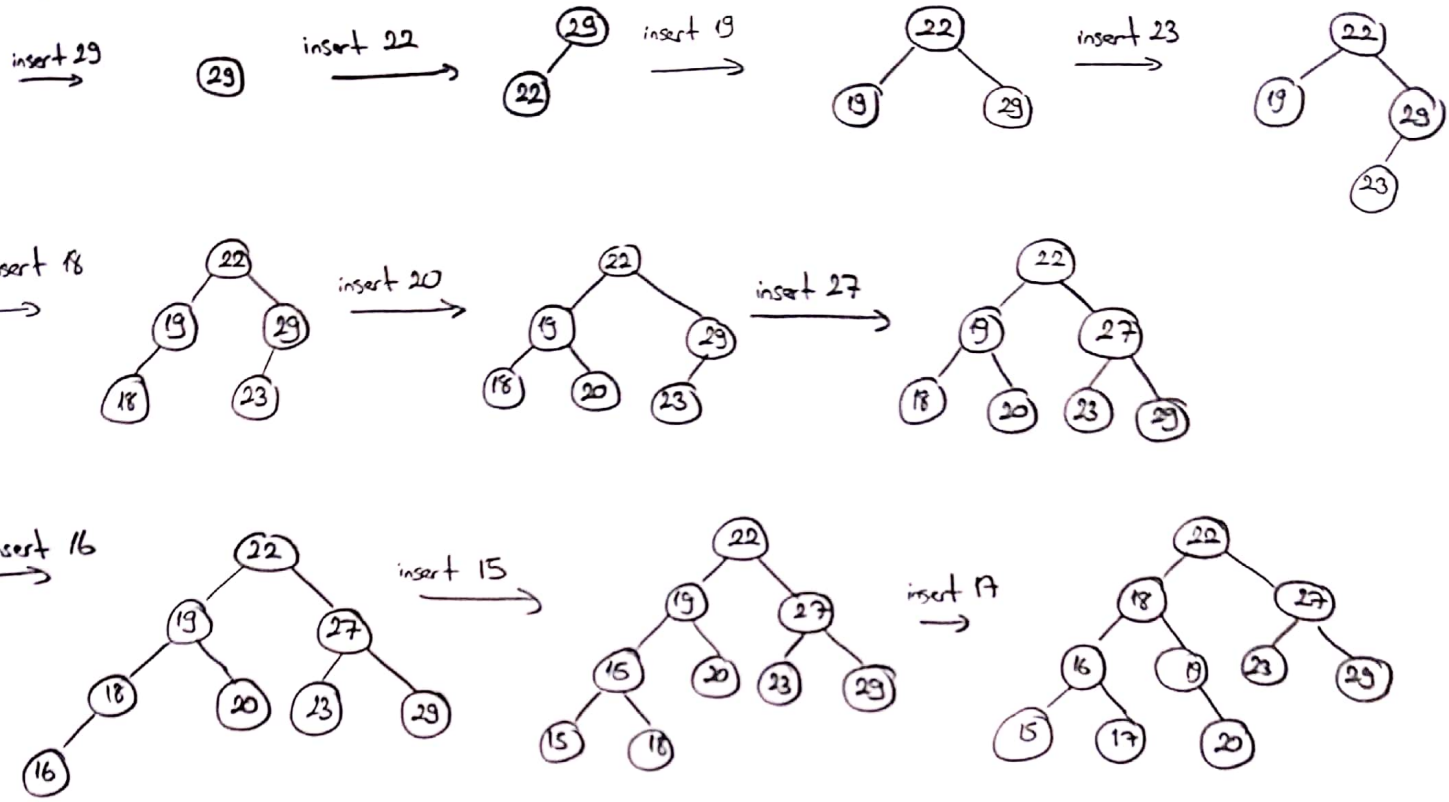
a)



b-) (Print the minheap from (a))

- Preorder : 15 16 18 24 22 19 17 20 25 => NOT SORTED
- InOrder : 24 18 22 16 19 15 20 17 25 => NOT SORTED
- PostOrder : 24 22 18 19 16 20 25 17 15 => NOT SORTED

c-)



Q3| I use "findNumberOfPrinter" function to identify printer number. We start from 1 and increment the printer number to find optimal one.

```
int no = 1;
bool check = true;
while (check) {
    if( average >= ProcessedTime (no) )
            check = false
    no ++;
}
```

⇒

```
int no = 1;
bool check = true;
while (check) {
    if( average >= ProcessedTime(no))
            checkk = false
    no = 2* no;
}
bool check2 = true;
while (check2) {
    if(processed Time (no) > average )
            Check2 = false;
    no --;
}
```

ProcessedTime(no) : it takes int no (printer number) as a parameter and returns the average time with given number of Printer.

If the large number involve the situation;

Instead of incrementing one by one; in first while loop we double the number of printer and get the closest "2^n" value for the number of the printer.

Then second loop decrement that value as long as desired averagetime is not exceeded.

$O(n)$ turns to $O(\log_2 n)$ so the right number can be found more efficient by that way for the VERY LARGE numbers.