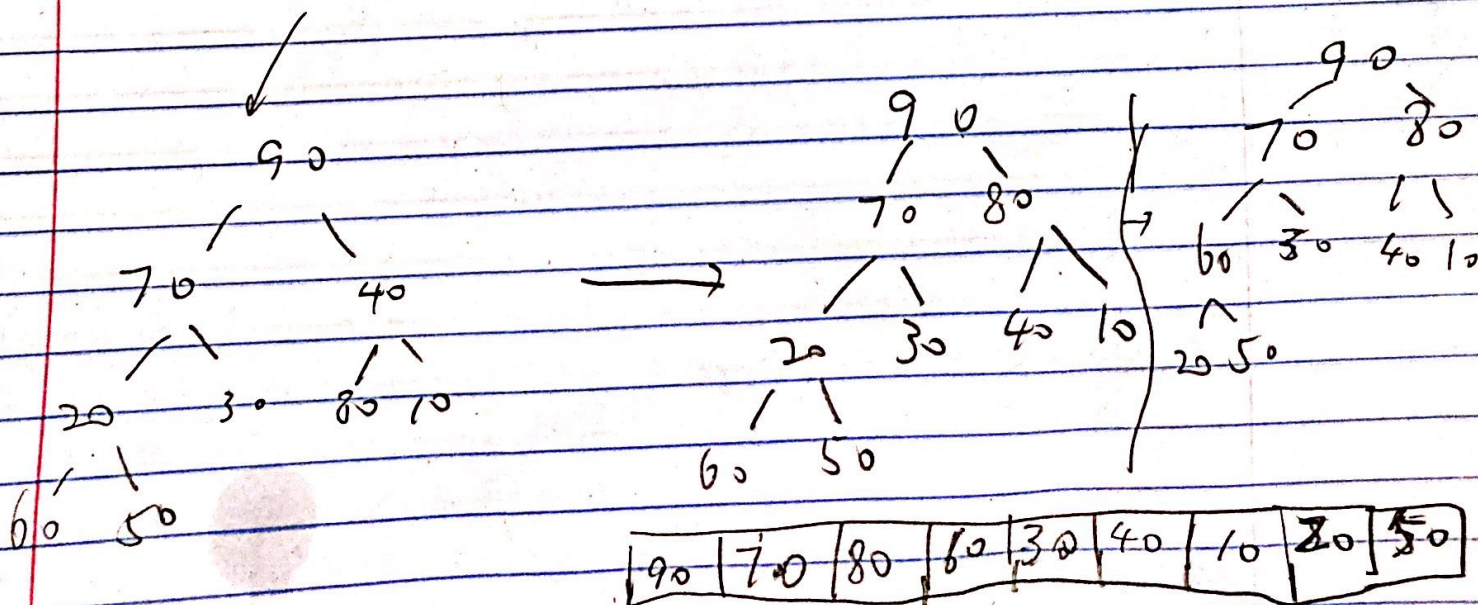
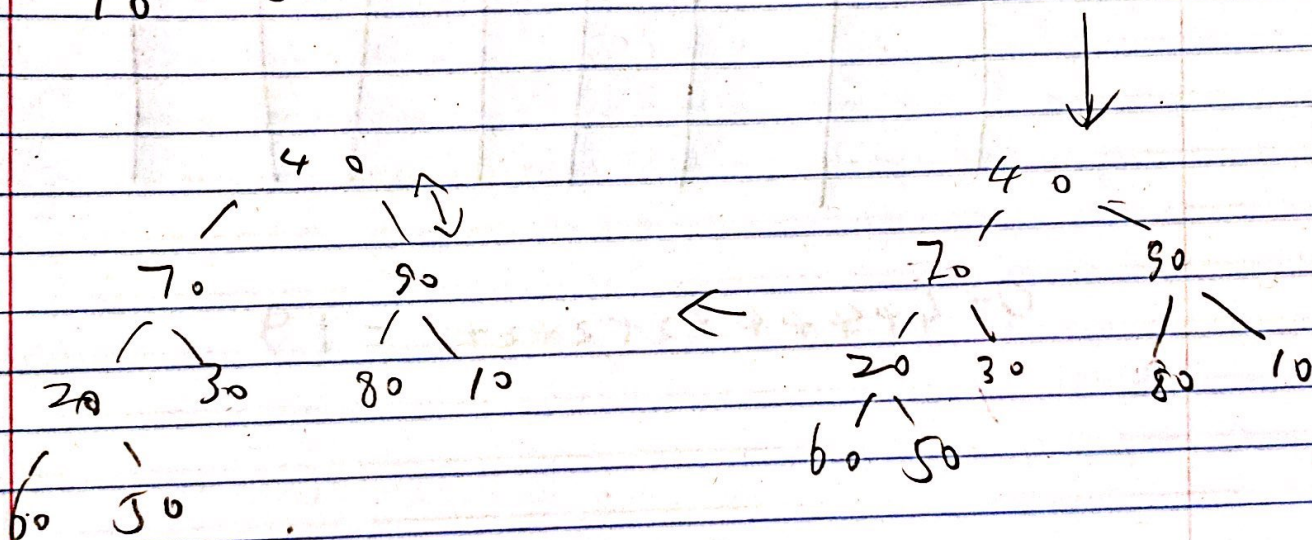
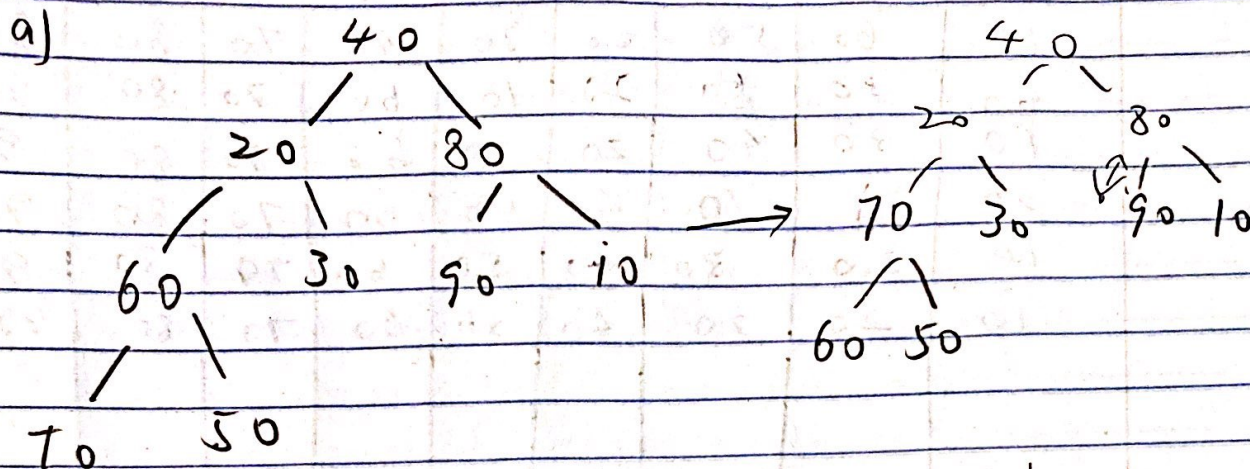


HW 4:

① 40, 20, 80, 60, 30, 90, 10, 70, 50 size 9



90	70	80	60	30	40	10	20	50
----	----	----	----	----	----	----	----	----

Total comparison: 12


$$0 + 4 + 4 + 4 + 2 + 2 + 2 + 1 = 19$$

2. Sort a lot linear time:

Insert all into p-queue remove
size n

q.ii)

5	7	6	8	3	1	2	4
---	---	---	---	---	---	---	---

 size 8

priority size 5

~~sort(12e)~~ {

if $(s \geq n)$

mergesort(Q)

} if $(s < n)$

test = n/s

if $(test \% 2 \neq 0)$

test += 1

for $(i=0; i \leq test; i++)$

mergesort($Q[i]$);

} else { for $(i=0; i \leq test; i++)$

mergesort($Q[i]$);

}

(ii) Queue inserts: (if $s \geq n$) Number = $2n-1$

No. of comparison: $\sum_{i=0}^{\lg n - 1} 2^i \left(\frac{n}{2^i} - 1 \right) = n \lg n - n + 1$