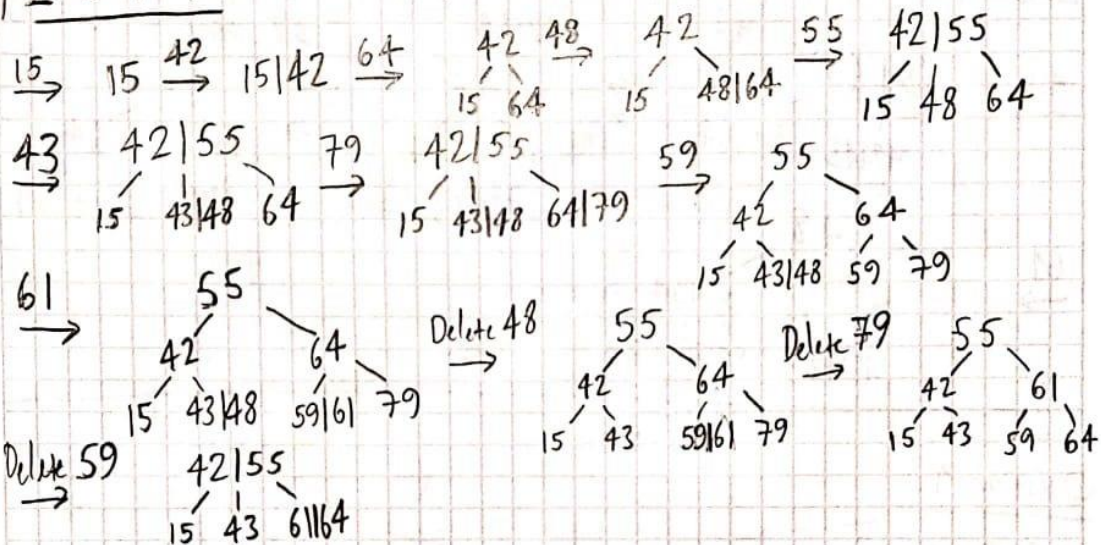
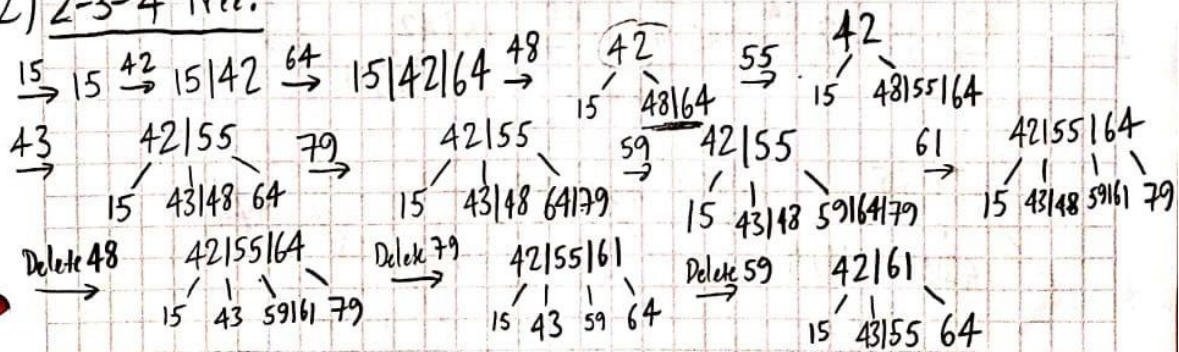


Question 1

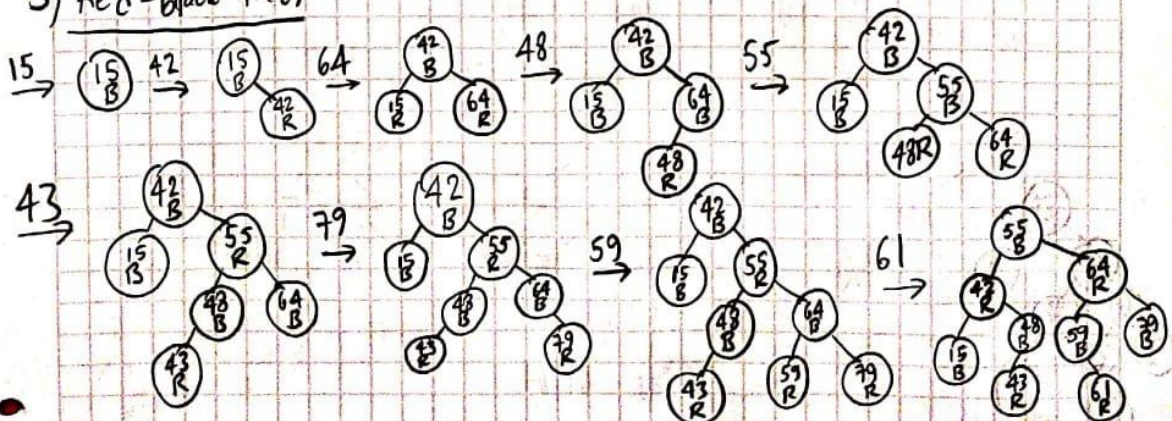
1) 2-3 Tree:



2) 2-3-4 Tree:



3) Red-black tree:



Question 2

1) Open addressing with linear probing:

0	
1	
2	
3	
4	
5	22
6	23
7	24
8	39
9	40
10	26
11	41
12	43
13	26
14	
15	
16	

2) Open addressing with quadratic probing:

0	26
1	43
2	
3	
4	
5	22
6	23
7	24
8	41
9	39
10	40
11	
12	
13	26
14	
15	
16	

3) Separate chaining:

0		
1		
2		
3		
4		
5	22	→ 39
6	23	→ 40
7	24	→ 41
8		
9	26	→ 43 → 26
10		
11		
12		
13		
14		
15		
16		