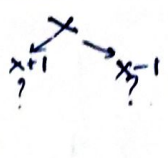
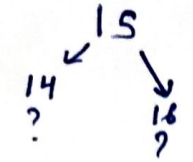
Question 1

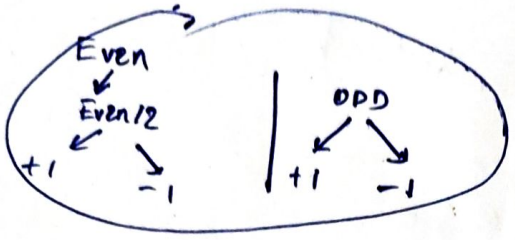
13 → 14 → 7 → 8 → 4 → 2 → 1
13 → 12 → 6 → 3 → 3 → 2 → 1



10 → 5 →
18 → 9
20 → 10 → 5 → 5
44 → 22 → 11
6+3+2
5+1+3

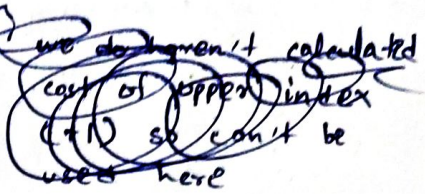


DP array → [0 1 2 3 . . . . .]



Bottom up:

cost [0] = 0
cost [1] = 0
cost[2] = 2/1 + cost[1] = 1
cost [3] = 1 + min [cost [2], cost [4]]



~~TOP-DOWN~~

~~cost function~~

~~cost [i] = if i=odd → min cost [i] = max [1 + max [cost[i-1] + cost[i+1]~~
min [cost[i-1] + cost[i+1]]

cost [4] → can be split to 4/2 + cost [2] which we know at index i = 3.

∴ for (i)

i == even

~~cost~~ cost [i] = 1 + cost [i/2]

i == odd

cost [i] = 1 + min [cost [i-1], 1 + cost [(i+1)/2]]

correction given in whatsapp, even number split cost = 1

5 → 1 + (3, 3x

1 + 8 + 7

7 → 1 + (6, 4+2+1)

8 → 4+2+1

14 → 7 +

9 →