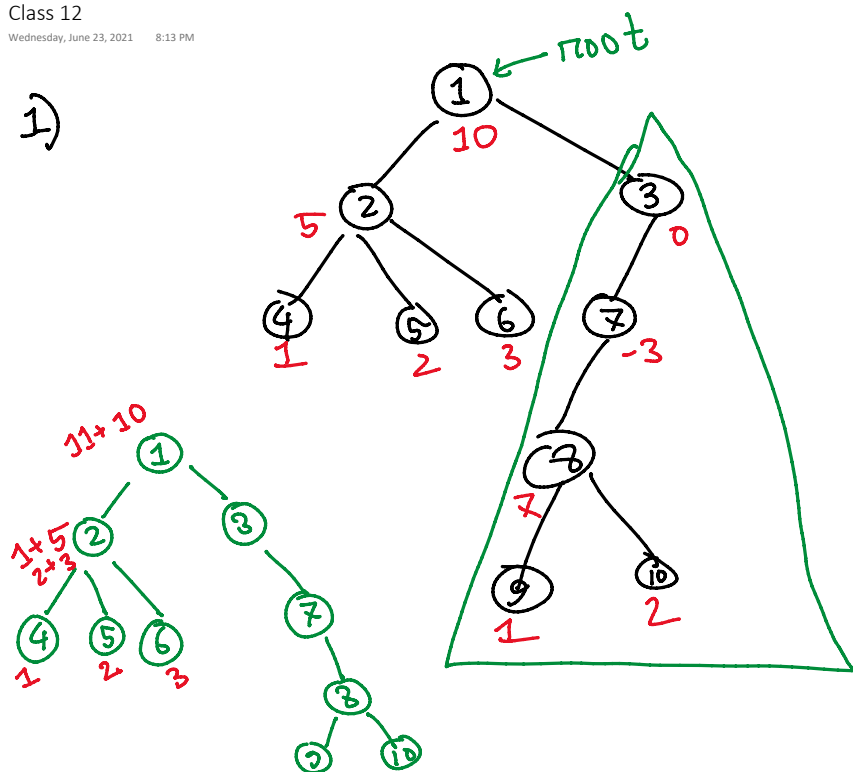


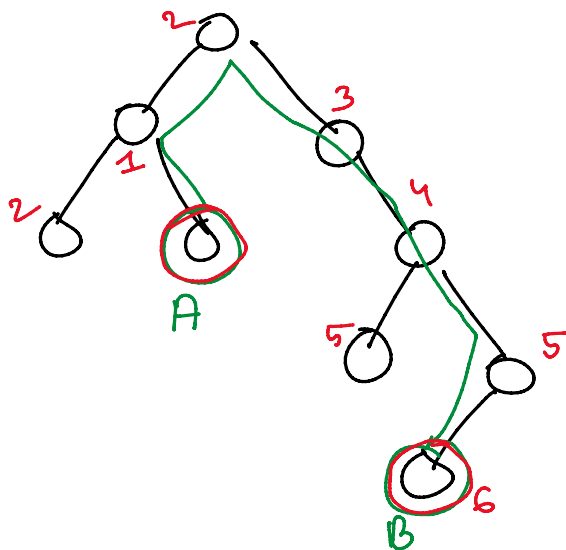
1)



$$\begin{aligned} 1 &\leq N \leq 10^5 \\ 1 &\leq |V| \leq 10^9 \\ 1 &\leq Q \leq 10^5 \end{aligned}$$

$Q_3 \rightarrow 7$

2



③

12

→ 0

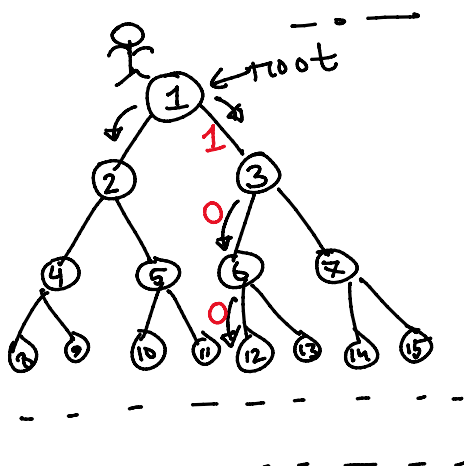
6

→ 0

2

$\rightarrow 1$

1

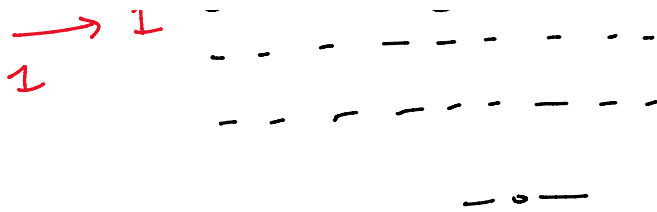


$$K = 12$$

$$1 \leq K \leq 10^9$$

C  
1100

$$\begin{bmatrix} 3 & 4 \\ 2 & -1 \end{bmatrix}$$



$$\left[ 2^{j-1} \right]$$

④

$A \longrightarrow B$

$1 \leq A, B \leq 10^5$  i) LCA

ii) Sparse Table

1)  $A = 2A$

2)  $A = A - 1$

3)  $A = A + 1$

$A = 5$

$B = 9 \longrightarrow 2$

$[1, 2B]$

