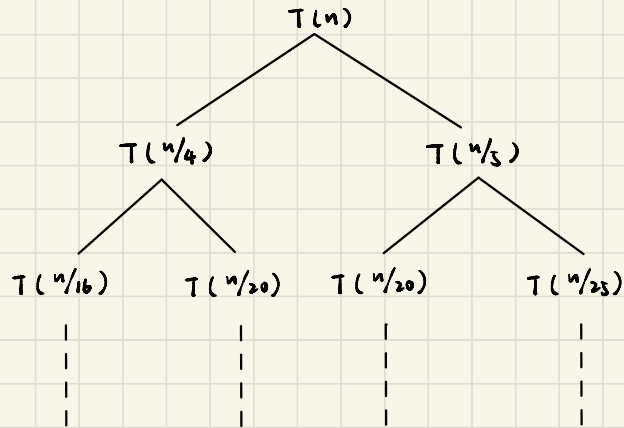


B)

$$T(n) \leq T(n/4) + T(n/3) + O(n)$$



$$\text{level 1} : C \cdot n$$

$$\text{level 2} : n/4 + n/3 \approx 9/20 C \cdot n$$

$$\text{level 3} : (n/16 + n/20) + (n/20 + n/23) \approx 81/400 C \cdot n$$

$$\text{depth of tree} = \log_4 n$$

$$T(n) \approx (n + 9/20 \cdot n + (9/20)^2 \cdot n + \dots + (9/20)^{k-1} \cdot n) \cdot \log_4 n$$

$$\approx \left(\frac{1}{1 - 9/20} \right) \cdot n \cdot \log_4 n$$

$$\approx 20/11 C \cdot n \cdot \log_4 n$$

$$\approx O(n \log n)$$