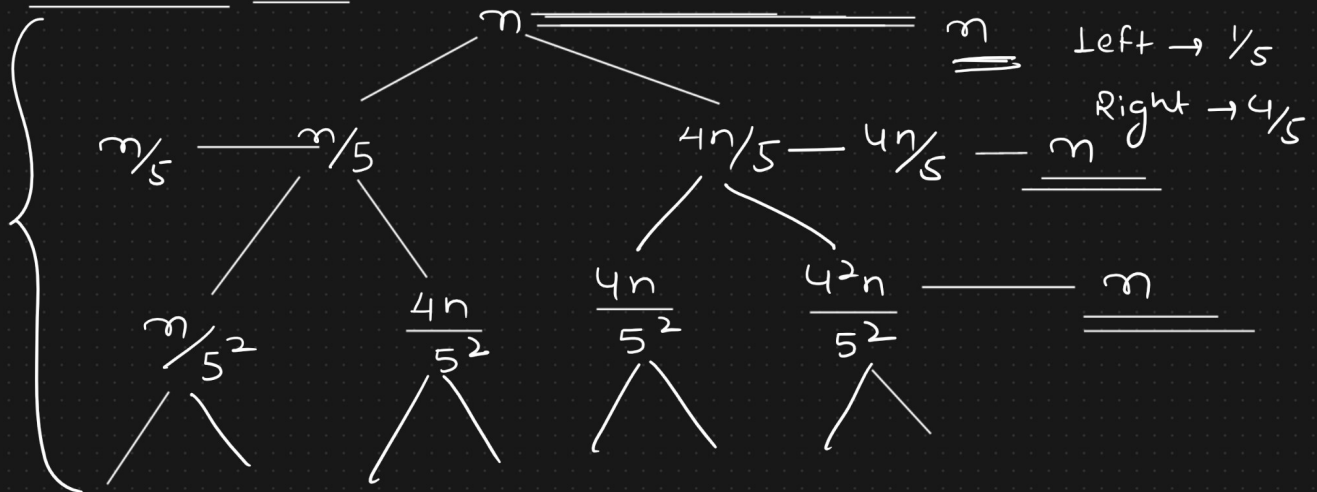


Recursive Tree Approach

→ More than one recursive term in a recurrence relation.

$$T(n) = \begin{cases} 1 & \underline{\underline{n=1}} \\ T\left(\frac{n}{5}\right) + T\left(\frac{4n}{5}\right) + n & n > 1 \end{cases}$$

Recursive Tree



Left Part

$$\frac{n}{5^k} = 1$$

$$n = 5^k$$

$$k = \log_5 n$$

Right Part

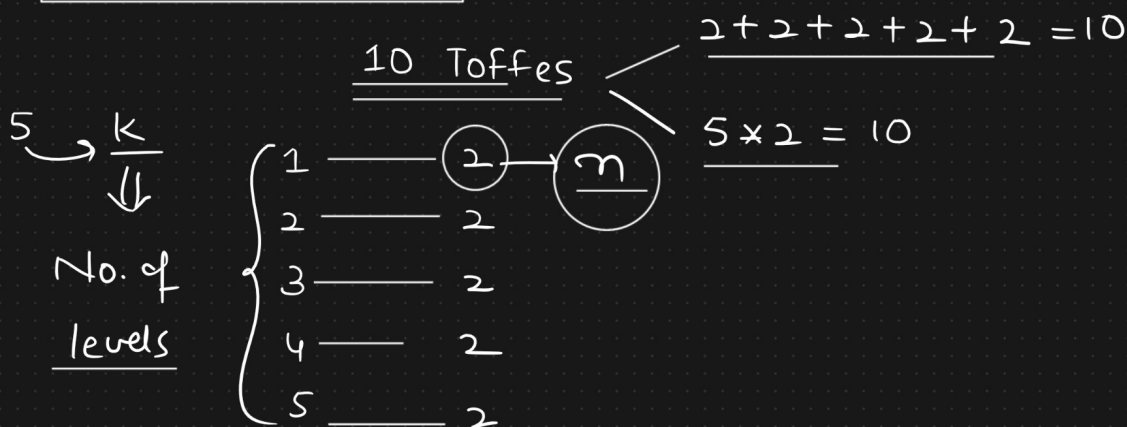
$$n \left(\frac{5}{4}\right)^k = 1$$

$$n = \left(\frac{5}{4}\right)^k$$

$$\log_{5/4} n = k$$

→ Higher Value

$$\log_5 n > \log_{10} n$$



$$\underline{\underline{\Rightarrow O(n \log_{5/4} n)}}$$