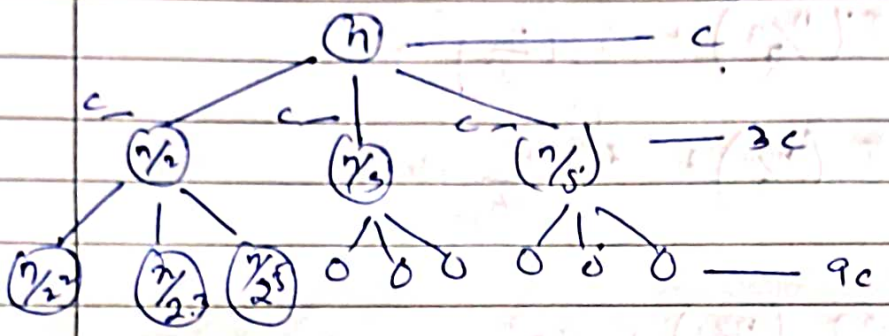
② $T(n) = T(n/2) + T(n/3) + T(n/5) + c$



left

$n/2^k = 1 \quad n = 2^k \quad k = \log_2 n$ (Highest value)

mid

$n/3^k = 1 \quad k = \log_3 n$

right

$n/5^k = 1 \quad k = \log_5 n$

Sum all cost to k^{th} times

$(3)^0 c + (3)^1 c + (3)^2 c + \dots + (3)^k c$

$c\left((3)^0 + (3)^1 + (3)^2 \dots 3^{\log_2 n}\right)$

↳ G.P series

$r = 3$

$a = 1$

$S = \frac{a(r^n - 1)}{r - 1} = c\left(\frac{1(3^{\log_2 n} - 1)}{3 - 1}\right)$

$= c\left(\frac{n^{\log_2 3} - 1}{2}\right)$

$= O(n^{1.5})$ i.e $O(n)$