$\Rightarrow T(1) * 2 * 3 * \_\_\_ * n-1 * n$

$\Downarrow$

1

$\Rightarrow 1 * 2 * 3 * \_\_\_ * n-1 * n = O(n!)$ ←

$5! = 5 \times 4 \times 3 \times 2 \times 1$

$= O(n^n)$

$n! < n^n$

$f(n) <= c \cdot g(n)$

$c = 1$

1) $T(n) = \begin{cases} 1 & n = 1 \\ 2T\left(\frac{n}{2}\right) + n & n > 1 \end{cases}$ Answer = $O(n \log n)$

Assignment Problem

3) $T(n) = \begin{cases} 1 & n = 1 \\ 8T\left(\frac{n}{2}\right) + n^2 & n > 1 \end{cases}$