Date :

Masters Theorem Assignment

(1) $T(n) = 8T(n/2) + 1000n^2$

$\log_2^8 = 4 > k = 2$

$T(n) \in \Theta(n^2)$

(2) $T(n) = 2T(n/2) + n^2$

$\log_2^2 = 1 < k = 2$

$T(n) \in \Theta(n^2)$

(3) $T(n) = 2T\left(\frac{n}{2}\right) + 10n$

$\log_2^2 = 1 = k = 1$

$T(n) \in \Theta(n \log n)$