$T(n) = aT(n/b) + c * n^d$

① $T(n) = 8T(n/2) + 1000n^2$

$a = 8 \quad b = 2 \quad c = 1000 \quad d = 2$

$b^d = 4,$

$a > b^d$

$T(n) \in n^{\log_b a}$

$T(n) \in n^{\log_2 8} \Rightarrow T(n) \in n^3$

② $T(n) = 2T(n/2) + n^2$

$a = 2, \quad b = 2, \quad d = 2$

$a < b^d$

$2 < 4$

$T(n) \in n^d$

$T(n) \in n^2$

③ $T(n) = 2T(n/2) + 10n$

$a = 2 \quad b = 2 \quad d = 1$

$a = b^d$

$T(n) = n^d \log n = n \log n$