Master's Theorem.

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

$a = 8, \quad b = 2, \quad d = 2 \quad$ since $a > b^d$

$\Rightarrow T(n) \in O(n^3)$

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

$a = 2, \quad b = 2, \quad d = 2 \quad$ since $a < b^d$

$\Rightarrow T(n) \in O(n^d) = O(n^2)$

3] $T(n) = 2T(n/2) + 10n$

$a = 2, \quad b = 2, \quad d = 1 \quad$ since $a = b^d$

$\Rightarrow T(n) \in O(n^d \log n) = n(\log n)$