a) $T(n) = 4\,T(n/2) + n^2$ $\begin{cases} a = 4 \\ b = 2 \\ f(n) = n^2 = n^{\log_2 4} = n^2 \end{cases}$

Logo $\boxed{T(n) = \Theta(n^2 \log n)}$

b) $T(n) = 2\,T(n/2) + 1$ $\begin{cases} a = 2 \\ b = 2 \\ f(n) = 1 < n^{\log_2 2} = n \end{cases}$

Logo $\boxed{T(n) = \Theta(n)}$

c) $T(n) = 3\,T(n/3) + \sqrt{n}$ $\begin{cases} a = 3 \\ b = 3 \\ f(n) = n^{1/2} < n^{\log_3 3} = n \end{cases}$

Logo $\boxed{T(n) = \Theta(n)}$

d) $T(n) = 6 \cdot T(n/3) + n^2 \log n$ $\begin{cases} a = 6 \\ b = 3 \\ f(n) = n^2 \log n > n^{\log_3 6} \end{cases}$

Logo $\boxed{T(n) = \Theta(n^2 \log n)}$