All elements in the right of Pivot should be smaller or equal to Pivot. Pivot should not be equal or less than the first element. Then Pivot.

Quick Sort.
Let $T(n)$ be the # of computations needed.

We have

$T(n) = T(0) + T(1) + \sum_{i=2}^{n} T(n-i) + \sum_{i=1}^{n-1} c_i$

Since $T(0) = T(1) = b$ for some constant $b$,

$T(n) = 2T(n) + \sum_{i=1}^{n-1} c_i$

Let $T(n) = n^2$.

Proof:

For $n = 0, 1$, it is trivial.

For $n > 1$, we have

$T(n) \geq \frac{n}{2}[T(0) + T(1) + \sum_{i=2}^{n} T(n-i) + \sum_{i=1}^{n-1} c_i]$
\[ T(n) = \log n = o(n \log n) \]

Let \( n \geq 2 \) and \( c > 0 \).

Now, \( \frac{\log n}{n^c} \) is a non-negative function.

Using Stirling's Formula (asymptotics):

\[ T(n) = \log n = o(n \log n) \]

By Stirling's formula:

\[ (2^{2n}) = (2^{cn}) \]

\[ \frac{\log n}{n^c} = 2c + \frac{n}{c} = 2c + 2c = 2c + 2c \]

\[ n = 2 \]