

Answer - 6

* Worst case time complexity of Quick Sort = $O(n^2)$

* Average case time complexity of Quick Sort = $O(n \log n)$

Worst Case if the pivot element is in the last position of an array $O(n^2)$

Average case if the pivot element is in the middle/random position of an array.

1, 2, 3, ..., (Pivot) ... (n)

(n) 1, 2, 3, (Pivot) 7, 8, 9

1, 2, 3, 2, ... < Pivot

1, 2, 3 < (Pivot) > 7, 8, 9

1, 2, 3, 4, ..., n, n+1, n+2, ..., n

1, 2, 3 < (Pivot) > 7, 8, 9

1, 2, 3, 4, ..., n, n+1, n+2, ..., n

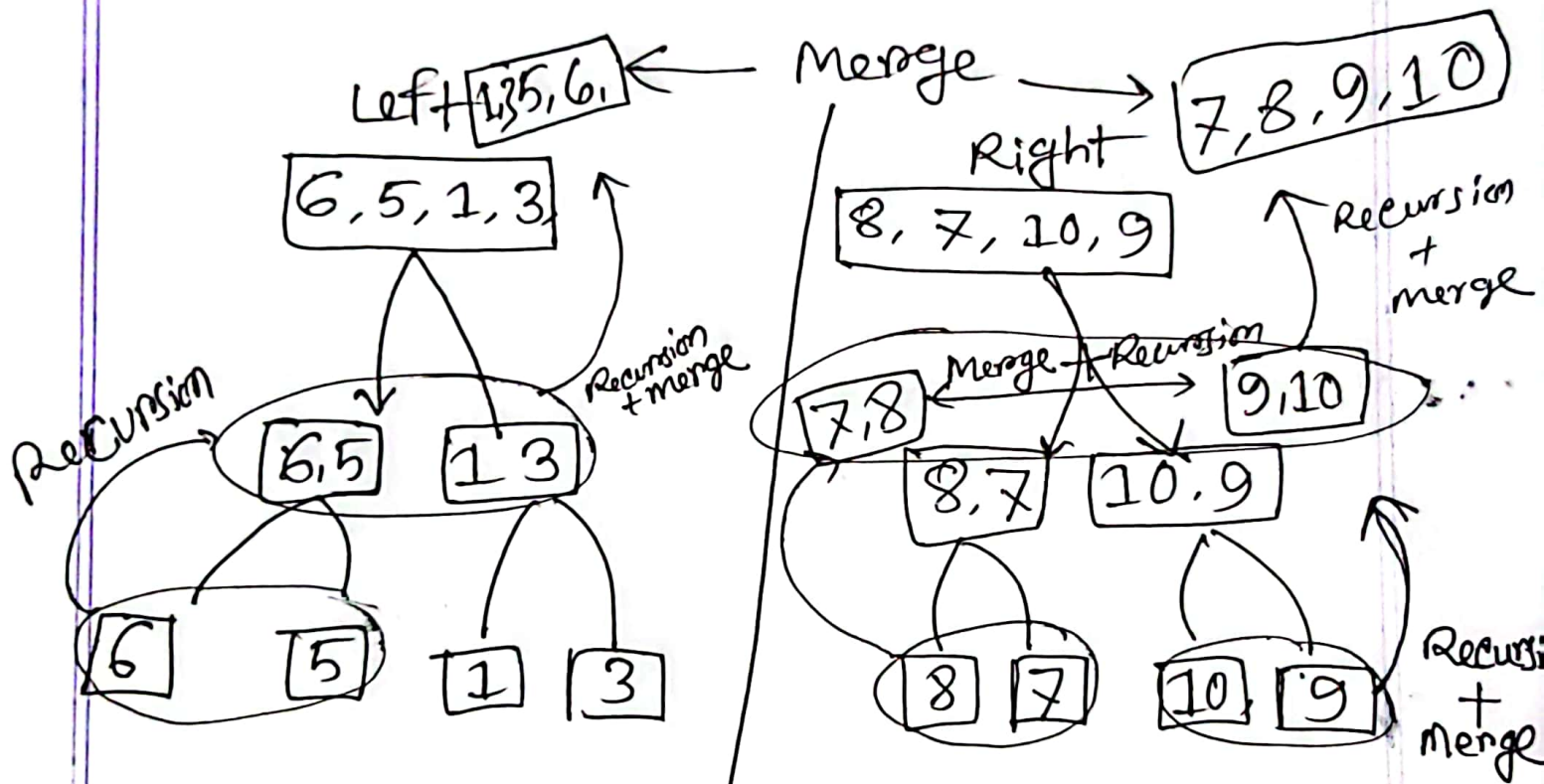
1, 2, 3 < (Pivot) > 7, 8, 9



$\left(\frac{n}{2}\right)$ Level: elements
 $1 + \frac{n}{2} + \frac{n}{4} + \frac{n}{8} + \frac{n}{16} + \dots$
 $= (\log n)$ Level.

Answer - 7

[6, 5, 1, 3, 8, 7, 10, 9]



idx=0 ~~V. Output~~

[1, 3, 5, 6] left

[7, 8, 9, 10] Right

idx=0

[1, 3, 5, 6, 7, 8, 9, 10]

Final Output

Answer