

[16,21,11,8,12,22]

Merge Sort

[16,21,11]      [8,12,22]

[16, 21] [11]    [8,12] [22]

[16] [21] [11]   [8] [12] [22]

[16, 21] [11]    [8, 12] [22]

[11, 16, 21]    [8, 12, 22]

[8, 11, 12, 16, 21, 22]

Big-O:  $n \log(n)$