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# Recursion, Devide and Conquer

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## Exercise 1: Recursion

- a)    a. 2 - 5 - 6 - 4 - 9 - 8 - 12 - 11 - 7  
      b. 7 - 4 - 2 - 6 - 5 - 11 - 8 - 9 - 12  
      c. 2 - 4 - 5 - 6 - 7 - 8 - 9 - 11 - 12

**Exercise 2:** Diveide and Conquer

a)

 $[12, 10, 3, 21, 17, 5, 9]$  $[12, 10, 3, 21]$  $[12, 10]$  $[12]$  $[12]$  $[10]$  $[10]$  $[10, 12]$  $[3, 21]$  $[3]$  $[3]$  $[21]$  $[21]$  $[3, 21]$  $[3, 10, 12, 21]$  $[17, 5, 9]$  $[17, 5]$  $[17]$  $[17]$  $[5]$  $[5]$  $[5, 17]$  $[9]$  $[9]$  $[5, 9, 17]$  $[3, 5, 9, 10, 12, 17, 21]$

b)

[10, 7, 5, 15, 13, 3, 6, 11, 4]

[7, 5, 3, 6, 4]

[5, 3, 6, 4]

[3, 4]

[]

[]

[4]

[4]

[3, 4]

[6]

[6]

[3, 4, 5, 6]

[]

[]

[3, 4, 5, 6, 7]

[15, 13, 11]

[13, 11]

[11]

[11]

[]

[]

[11, 13]

[]

[]

[11, 13, 15]

[3, 4, 5, 6, 7, 10, 11, 13, 15]

c) [0, 0]