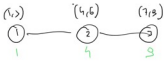


$$\begin{array}{cccccc|cc} -4 & -3 & -2 & 0 & 1 & & 4 & 6 \end{array}$$

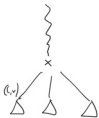
$$\begin{array}{cccccc|cc} -4 & -4 & -2 & 0 & 2 & & 4 & 6 \end{array}$$



$$Q_i \in [L_i, v_i]$$

$$\text{maximize } \sum_{(u,v) \in T} |a_u - a_v|$$

$$\begin{array}{ccc} (1,3) & (4,6) & (7,9) \\ \begin{array}{c} L \\ 1 \end{array} & \begin{array}{c} R \\ 6 \end{array} & \begin{array}{c} L \\ 7 \end{array} \Rightarrow 6 \\ \begin{array}{c} R \\ 3 \end{array} & \begin{array}{c} L \\ 4 \end{array} & \begin{array}{c} R \\ 9 \end{array} \Rightarrow 6 \end{array}$$



sort

$$1, 3, 6, \dots$$

$$f(n) = ?$$

.....

$$f(3) \quad \text{[diagram of 3 arcs]} \quad 1$$

$$\text{[diagram of 3 arcs with middle arc nested]} \quad 3$$

$$\text{[diagram of 3 arcs with middle arc nested and crossing]} \quad 1$$

$$\text{[diagram of 3 arcs with middle arc nested and crossing]} \quad 1$$

$$f(n) = 2 + f(i-1) + f(i-2)$$

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

$$f(4) = \text{[diagram of 4 arcs]} \quad 1$$

$$\text{[diagram of 4 arcs with middle arc nested]} \quad 6$$

$$\text{[diagram of 4 arcs with middle arc nested and crossing]} \quad 3$$

$$\text{[diagram of 4 arcs with middle arc nested and crossing]} \quad 1$$

$$\text{[diagram of 4 arcs with middle arc nested and crossing]} \quad 1$$

$$1, 3, 6, 12, 24, 48, 96$$

WRONG!

$$f(4) = \dots \quad \text{[diagram of 4 arcs]} \quad f(3)$$

$$\text{[diagram of 4 arcs]} \quad f(2)$$

$$\text{[diagram of 4 arcs]} \quad f(1)$$

$$\text{[diagram of 4 arcs]} \quad l=4 \checkmark$$

$$\text{[diagram of 4 arcs]} \quad \times \quad l=3 \times$$

$$\text{[diagram of 4 arcs]} \quad l=2 \checkmark$$

$$\text{[diagram of 4 arcs]} \quad l=1 \checkmark$$

$$f(n) = ND(n) + \sum_{i=1}^{n-1} f(i)$$

number of
divisions