

## Problema 3

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### Algorithm 1 Max-Heapify

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1: procedure MAX-HEAPIFY( $A, i$ )
2:   while  $u \neq 0$  do
3:     if  $\text{Left}(i) \neq \text{nil}$  or  $\text{Right}(i) \neq \text{nil}$  then
4:        $u \leftarrow 1$ 
5:        $l \leftarrow \text{Left}(i)$ 
6:        $r \leftarrow \text{Right}(i)$ 
7:       if  $l \leq A.\text{heap} - \text{size}$  and  $A[l] > A[i]$  then
8:          $\text{largest} \leftarrow l$ 
9:       else  $\text{largest} \leftarrow i$ 
10:      if  $r \leq A.\text{heap} - \text{size}$  and  $A[r] > A[\text{largest}]$  then
11:         $\text{largest} \leftarrow r$ 
12:      if  $r \neq i$  then
13:        exchange  $A[i]$  with  $A[\text{largest}]$ 
14:      else  $u \leftarrow 0$ 
```

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