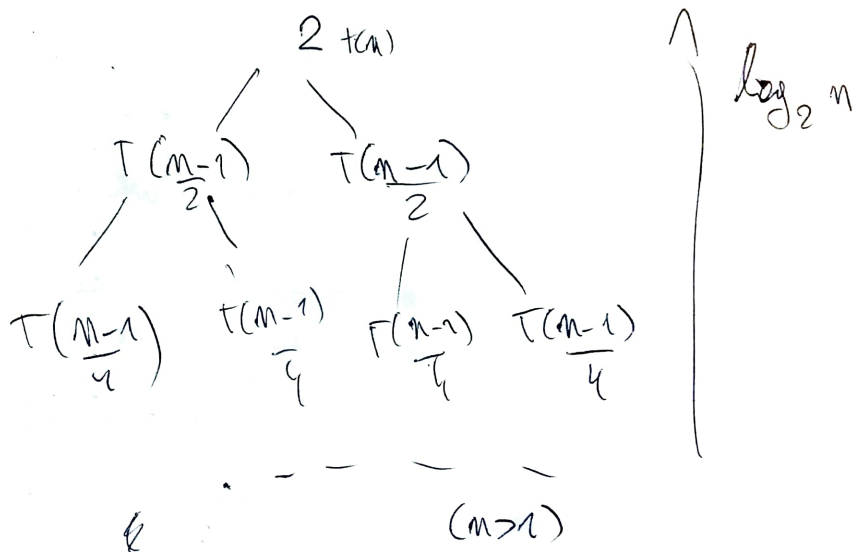


$$T(m) = \begin{cases} 3 & \text{if } m=0 \\ T(m-1) + 2 & \text{if } m > 0 \end{cases}$$

DOMANDA A

$$T(m-1) + 2 \text{ if } m > 0$$



$$(m=1)$$

$$T(m) = a \log m + b m + c$$

$$T(1) = 3$$

$$a \log 1 + b + c = 3$$

$$\text{or } b + c = 3$$

$$b + c = 3 \rightarrow b = 3$$

$$T(m) = a \log m + b m + c = 3m$$

$$a + b = b \quad a = 0$$

$$(m > 1) \\ T(m) = T(m-1) + 2$$

Per in. ind. base

$$= a(n-1) \log(n-1) + b(n-1) + c$$

$$= (a n - a) (\log n - \log 1) + b(n-1) + c$$

$$= (a n - a) \log n + b n - b + c$$

$$= n(a+b) - a \log n - b + c$$

ESERCIZIO 1

```
PRINTFAIR (T)
X ← T.ROOT
IF (X = NIL) RETURN NIL
LEFT, SUM_L = PRINTFAIR (X → LEFT) SUM_K ← L + X.K
RIGHT, SUM_R = PRINTFAIR (X → RIGHT) SUM_K ← R +
SUM_L + SUM_R SUM_K ← SUM_K + L
IF (SUM_L + SUM_R == SUM_K - L + SUM_K - L)
    PRINT X
ELSE
    RETURN SUM_L + SUM_R
```

ESERCIZIO 2

$$\begin{cases} l_i + l_s & \text{se } i=0, s=0 \\ 1 + l(i-1, s-1) & \text{se } i>0, s>0, x_i = y_s \\ \min \{1 + l(i-1, s), 1 + l(i, s-1)\} & \text{se } i>0, s>0, x_i \neq y_s \end{cases}$$

SCS(x, y, k, h)

FOR $i = 1$ TO k

$L[i, 0] = i$

FOR $j = 1$ TO h

$L[0, j] = j$

COMPL. $O(kh)$

FOR $i = 1$ TO k

FOR $j = 1$ TO h

IF ($x[i] == x[j]$)

$L[i, j] = 1 + L[i-1, j-1]$

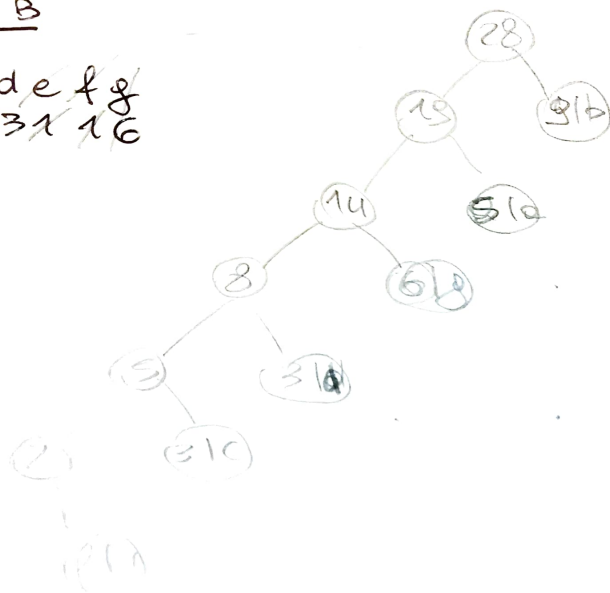
ELSE

$L[i, j] = \min(L[i-1, j], L[i, j-1]) + 1$

RETURN $L[k, h]$

DOMANDA B

a	b	c	d	e	f	g
5	8	3	3	1	1	6



DOMANDA C

pred(x)

if $x == \text{nil}$ return nil

if (x.left) return max(x.left)

else

aux = x.p

while (aux && x < aux.left)

x = aux

aux = aux.p

return x

Assumendo che la funzione max sia:

max(x)

while (x && x.right)

x = x.right

return x