EICO022 | TEORIA DA COMPUTAÇÃO | 2017/2018 - 1° SEMESTRE

Challenge 1 – Proof by Induction

Prove by induction that

when n is an exact power of 2, the solution of the recurrence

$$T(n) = \begin{cases} 2 & \text{if } n = 2, \\ 2T\left(\frac{n}{2}\right) + n & \text{if } n = 2^k, \text{for } k > 1 \end{cases}$$

is $T(n) = n \lg n$.