Recurrence for binary search

$$T(n) = 1\,T(n/2) + \Theta(1)$$

 # subproblems

subproblem size

work dividing and combining

$$n^{\log_b a} = n^{\log_2 1} = n^0 = 1 \Rightarrow \text{CASE } 2\ (k = 0)$$
$$\Rightarrow\ T(n) = \Theta(\lg n)\ .$$

Copyright © 2001-5 Erik D. Demaine and Charles E. Leiserson