

Last week, we proved *binSearch* is in $\Omega(\log n)$, i.e., $T(n) \geq c \log n$ where

$$T(n) = \begin{cases} 1 & n = 1 \\ 1 + T\left(\left\lceil \frac{n}{2} \right\rceil\right) & n > 1 \end{cases}$$

To warm up for Week 06, you may want

- to prove *binSearch* is in $O(\log n)$, i.e., $T(n) \leq c \log n$.
- to review the *mergeSort* algorithm
 - and guess and prove its time complexity
- to review the *closestPairOfPoints*¹ algorithm
 - and guess and prove its time complexity

¹ Assume n pairs of points in the 2D plane are given. Determine the closest pair in an efficient way.