

1. Write a function that finds the maximum value in an array containing  $n$  integers. Compute  $T(n)$  for the function.
2. Write a function that finds the largest difference between successive integers in an array containing  $n$  integers. Compute  $T(n)$  for the function.
3. Write a function that matches an input key in an array of  $n$  integers that are sorted in ascending order. Compute  $T(n)$  for the function.
4. Write a function that computes the mean value of an array of  $n$  integers. Compute  $T(n)$  for the function.