

Kth smallest element

Given an array `arr []` and a number `K` where `K` is smaller than size of array, the task is to find the `K`th smallest element in the given array. It is given that all array elements are distinct.

Expected Time Complexity: $O(n)$

Input:

The first line of input contains an integer `T`, denoting the number of testcases. Then `T` test cases follow. Each test case consists of three lines. First line of each testcase contains an integer `N` denoting size of the array. Second line contains `N` space separated integer denoting elements of the array. Third line of the test case contains an integer `K`.

Output:

Corresponding to each test case, print the `k`th smallest element in a new line.

Constraints:

$1 \leq T \leq 100$

$1 \leq N \leq 105$

$1 \leq arr[i] \leq 105$

$1 \leq K \leq N$

Example:

Input:

2

6

7 10 4 3 20 15

3

5

7 10 4 20 15

4

Output:

7

15

Explanation:

Testcase 1: 3rd smallest element in the given array is 7