

Sum of minimum and maximum elements of all subarrays of size k

Problem Statements :

You are given an array of both positive and negative integers, the task is to compute sum of minimum and maximum elements of all sub-array of size k.

Input Format :

First line contains integer t as number of test cases.

Each test case contains two lines. First line contains two integers n and k where n is length of the array and second line contains n space separated integer.

Constraints :

$1 < t < 10$

$1 < n, k < 10000000$

Output Format :

For each test case you have to print the required sum.

Sample Input :

```
2
7 4
2 5 -1 7 -3 -1 -2
7 3
2 5 -1 7 -3 -1 -2
```

Sample Output :

```
18
14
```

Explanation :

For test case 1 : Subarrays of size 4 are :

$\{2, 5, -1, 7\}$, $\min + \max = -1 + 7 = 6$
 $\{5, -1, 7, -3\}$, $\min + \max = -3 + 7 = 4$
 $\{-1, 7, -3, -1\}$, $\min + \max = -3 + 7 = 4$
 $\{7, -3, -1, -2\}$, $\min + \max = -3 + 7 = 4$

Sum of all min & max = $6 + 4 + 4 + 4 = 18$

Time Limit :

1 sec