The Last of Us

Input file:	`standard input`
Output file:	`standard output`
Time limit:	0.25 seconds
Memory limit:	4 megabytes

Given an integer array a of length n and a positive number k, you can perform the following operation **any** number of times:

- Choose an index $1 \leq i \leq n$ and remove elements $a_{max(1,i-k)}, \ldots, a_i, \ldots, a_{min(n,i+k)}$ from the array. The cost of such operation is the value a_i.
- If the array becomes partitioned after the operation, the two segments can be concatenated at no cost (i.e., a becomes $a_1, \ldots, a_{i-k-1}, \ldots, a_{i+k+1}, \ldots, a_n$).

Determine the minimum cost to make the array empty.

Input

The first line of the input contains a single integer, t ($1 \leq t \leq 10^4$) — the number of test cases.

The first line of each test case contains two integers, n and k ($1 \leq n \leq 200$, $0 \leq k < n$) — the length of the array and the number k.

The second line of each test case contains n integers, $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 10^9$) — the elements of the array.

It is guaranteed that the sum of n^2 over all test cases does not exceed $4 \cdot 10^4$.

Output

For each test case, output a single integer — the minimum cost to make the array empty.

Example

standard input	standard output
7 3 1 1 2 3 3 2 1 2 3 6 1 2 3 2 1 2 3 9 1 1 2 3 2 1 2 3 2 1 9 2 1 2 3 2 1 2 3 2 1 8 2 2 3 2 1 2 3 2 1 5 1 1 1 1 10 100	2 1 4 5 3 2 2

Note

In the first test case, all elements can be removed in a single operation with cost a_2.

In the second test case, all elements can be removed in a single operation with cost a_1.

In the fourth test case, three operations can be performed, with a minimum total cost of $a_2 + a_5 + a_8$.