Archaeologist Pepe

Pepe, the curious archaeologist, has discovered an ancient numeric inscription left by a lost civilization. The inscription consists of an array A of N numbers, believed to hold a hidden meaning.

Ancient writings indicate that the civilization measured the **stability** of any subarray $A[l \dots r]$ (i.e., values from index l to r inclusive) using the following formula:

$f(l, r) = (r - l + 1) \times$ (minimum element in $A[l \dots r]$ + second minimum element in $A[l \dots r]$)

Pepe's goal is to find the **maximum possible stability value** among **all subarrays of length at least 2** (subarrays where $1 \leq l < r \leq N$).

Input

The input consists of multiple test cases. The first line contains the integer T, the number of test cases. Then for each of the test cases, input is given in the following format:

- line 1: N
- line 2: $A[1]$ $A[2]$ $\dots$ $A[N]$

Output

For each test case, output a single line containing the **maximum stability** over all valid subarrays (subarrays of length ≥ 2).

Constraints

Let S_N be the sum of all N values over all test cases in a single input file.

- $2 \leq N \leq S_n \leq 2 \cdot 10^5$
- $1 \leq A[i] \leq 10^9$ (for all $1 \leq i \leq N$)

Subtasks

Subtask	Score	Additional constraints
1	5	$N = 2$
2	9	A contains at most 2 distinct values
3	11	$S_N \leq 500$
4	15	$S_N \leq 2000$
5	15	$1 \leq A[i] \leq 50$
6	15	$A[i]$ is generated randomly (for all $1 \leq i \leq N$)
7	30	No additional constraints.

Examples

Sample Input

```
3
3
1 2 3
5
10 5 1 3 2
3
5 10 5
```

The correct output is:

```
10
30
30
```

For the 1st test case,

- $f(1, 2) = (2 - 1 + 1) \cdot (1 + 2) = 6$
- $f(2, 3) = (3 - 2 + 1) \cdot (2 + 3) = 10$
- $f(1, 3) = (3 - 1 + 1) \cdot (1 + 2) = 9$

So, the maximum value is 10.