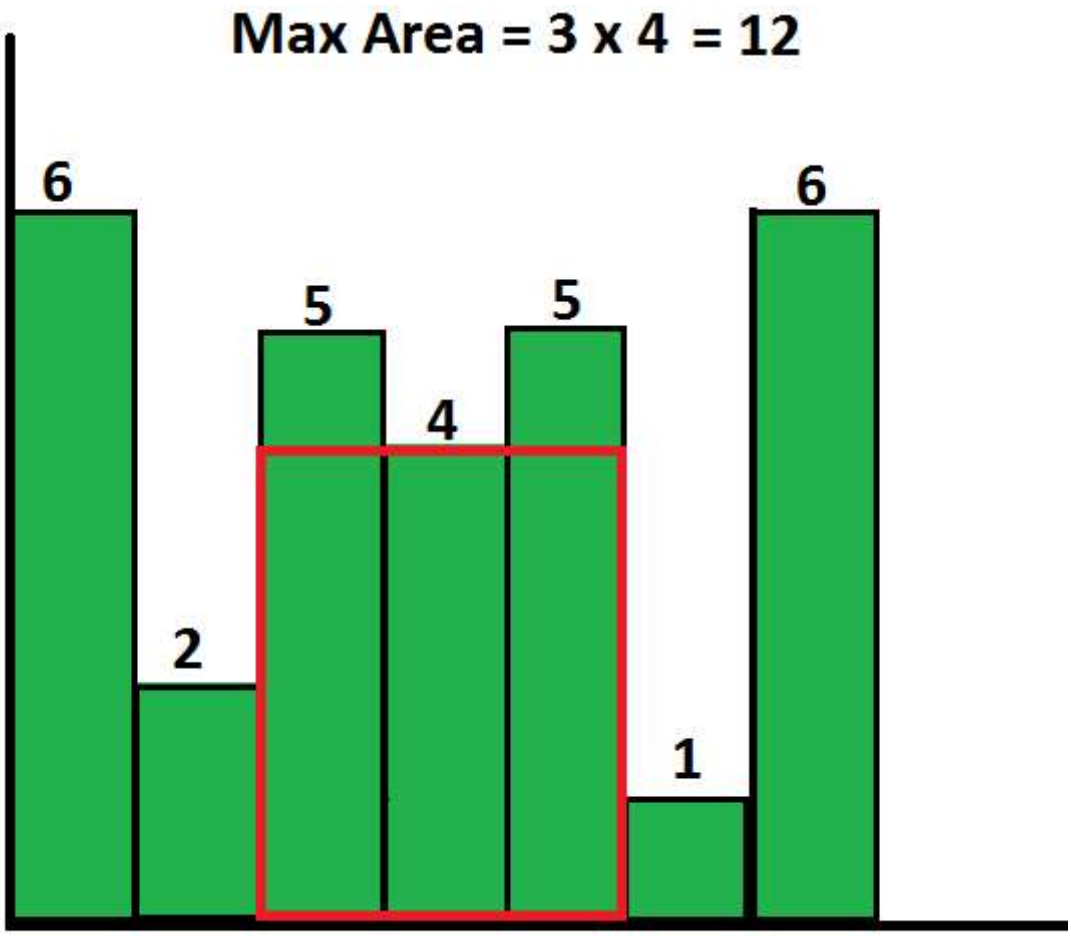
Description

Sherlock is a mad data scientist. Recently he drew a histogram using a dataset with size N from stock market showing the stock price on each day. Those days are consecutive. Can you help him find out the rectangle of the maximum area in the corresponding histogram?



Input

The first line of input is an integer T (1 <= T <= 10) representing the number of test cases. Each test case will follow the format shown below:

The first line: An integer N showing the number of days in the dataset.

The second line: N integers p1,p2,...,pN showing stock prices on each day.

(1 <= N<= 100000, 1 <= pi <= 100000).

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Output

For each case, print a single line containing the maximum area of the rectangle in the histogram.

Sample

Sample input

```
2
6
3 4 5 2 3 8
7
6 2 5 4 5 1 6
```

Sample output

```
12
12
```

Constraint and hint

Explanation for the sample 2:
We will choose consecutive days with price {5 4 5} to get the max area 12 as in the figure.

Tips: the result may be bigger than the range of int, you may consider using long long int instead of int.

C++ 17
GCC 10.2.0

C++ (NOI)
GCC 4.8.4 (NOILinux 1.4.1)

C++ 11 (NOI)

```
1  #include <iostream>
2  #include <string>
3  #include <stack>
4  using namespace std;
5
6  class stack{
7      private:
```