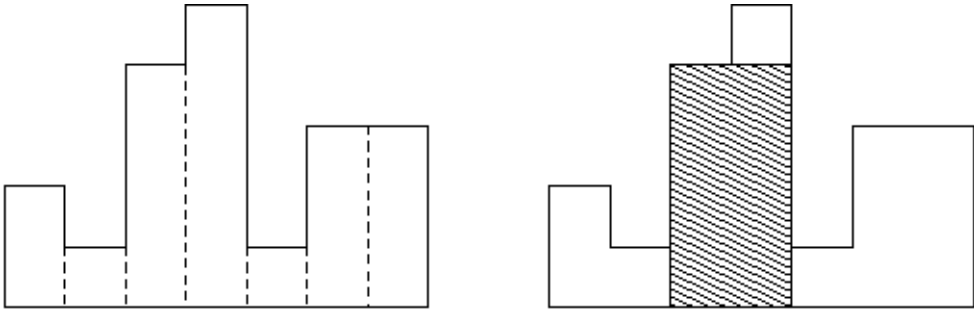


R. Histogram

time limit per test: 2 seconds

memory limit per test: 64 megabytes

A histogram is a polygon composed of a sequence of rectangles aligned at a common base line. The rectangles have equal widths but may have different heights. For example, the figure on the left shows the histogram that consists of rectangles with the heights 2, 1, 4, 5, 1, 3, 3, measured in units where 1 is the width of the rectangles:



Usually, histograms are used to represent discrete distributions, e.g., the frequencies of characters in texts. Note that the order of the rectangles, i.e., their heights, is important. Calculate the area of the largest rectangle in a histogram that is aligned at the common base line, too. The figure on the right shows the largest aligned rectangle for the depicted histogram.

Input

The input contains several test cases t ($1 \leq t \leq 100$). Each test case describes a histogram and starts with an integer n , denoting the number of rectangles it is composed of. You may assume that ($1 \leq n \leq 10^5$). Then follow n integers h_1, \dots, h_n , where ($0 \leq h_i \leq 10^9$). These numbers denote the heights of the rectangles of the histogram in left-to-right order. The width of each rectangle is 1.

Output

For each test case output on a single line the area of the largest rectangle in the specified histogram. Remember that this rectangle must be aligned at the common base line.

Example

input	Copy
2 7 2 1 4 5 1 3 3 4 1000 1000 1000 1000	
output	Copy
8 4000	

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

Public

Participant

→ Group Contests

Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)

Juniors Phase 1 Practice #4 (Binary search , Two pointers)

Juniors Phase 1 Practice #3 (STL 2)

Juniors Phase 1 Practice #2 (STL 1)

Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #2 (STL 1).

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
311720199	Mar/22/2025 02:09	Accepted
311719962	Mar/22/2025 02:02	Wrong answer on test 2
311719879	Mar/22/2025 02:00	Wrong answer on test 2