Nightmare Sum

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	512 megabytes

Given an array a of length n, consisting of distinct positive integers. Compute

$$\sum_{l=1}^{n}\sum_{r=l}^{n}\left\lfloor\frac{\max(a_l, a_{l+1}, \ldots, a_r)}{\min(a_l, a_{l+1}, \ldots, a_r)}\right\rfloor$$

Here, $\lfloor x \rfloor$ denotes x rounded down to the nearest integer.

Thus, it is necessary to compute the sum of the results of integer division of the maximum by the minimum over all subarrays of the array a.

Input

The first line of input contains a single integer n — the length of the array ($1 \le n \le 300\,000$).

The second line of input contains n integers — the array a ($1 \le a_i \le 300\,000$).

It is guaranteed that all numbers in the array a are distinct.

Output

Output a single number — the desired sum.

Example

standard input	standard output
6 1 3 6 4 2 5	56

Note

Let's consider the example in more detail:

$[l, r]$	$a[l \dots r]$	min	max	$\left\lfloor \frac{\max}{\min} \right\rfloor$
$[1, 1]$	$[1]$	1	1	1
$[1, 2]$	$[1, 3]$	1	3	3
$[1, 3]$	$[1, 3, 6]$	1	6	6
$[1, 4]$	$[1, 3, 6, 4]$	1	6	6
$[1, 5]$	$[1, 3, 6, 4, 2]$	1	6	6
$[1, 6]$	$[1, 3, 6, 4, 2, 5]$	1	6	6
$[2, 2]$	$[3]$	3	3	1
$[2, 3]$	$[3, 6]$	3	6	2
$[2, 4]$	$[3, 6, 4]$	3	6	2
$[2, 5]$	$[3, 6, 4, 2]$	2	6	3
$[2, 6]$	$[3, 6, 4, 2, 5]$	2	6	3
$[3, 3]$	$[6]$	6	6	1
$[3, 4]$	$[6, 4]$	4	6	1
$[3, 5]$	$[6, 4, 2]$	2	6	3
$[3, 6]$	$[6, 4, 2, 5]$	2	6	3
$[4, 4]$	$[4]$	4	4	1
$[4, 5]$	$[4, 2]$	2	4	2
$[4, 6]$	$[4, 2, 5]$	2	5	2
$[5, 5]$	$[2]$	2	2	1
$[5, 6]$	$[2, 5]$	2	5	2
$[6, 6]$	$[5]$	5	5	1