F. Money Trees

time limit per test: 2 seconds
memory limit per test: 256 megabytes

Luca is in front of a row of n trees. The i-th tree has a_i fruit and height h_i.

He wants to choose a contiguous subarray of the array $[h_l, h_{l+1}, \ldots, h_r]$ such that for each i ($l \leq i < r$), h_i **is divisible**† **by** h_{i+1}. He will collect all the fruit from each of the trees in the subarray (that is, he will collect $a_l + a_{l+1} + \cdots + a_r$ fruits). However, if he collects more than k fruits in total, he will get caught.

What is the maximum length of a subarray Luca can choose so he doesn't get caught?

† x is *divisible* by y if the ratio $\frac{x}{y}$ is an integer.

Input

The first line contains a single integer t ($1 \leq t \leq 1000$) — the number of test cases.

The first of each test case line contains two space-separated integers n and k ($1 \leq n \leq 2 \cdot 10^5$; $1 \leq k \leq 10^9$) — the number of trees and the maximum amount of fruits Luca can collect without getting caught.

The second line of each test case contains n space-separated integers a_i ($1 \leq a_i \leq 10^4$) — the number of fruits in the i-th tree.

The third line of each test case contains n space-separated integers h_i ($1 \leq h_i \leq 10^9$) — the height of the i-th tree.

The sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case output a single integer, the length of the maximum length contiguous subarray satisfying the conditions, or 0 if there is no such subarray.

Example

input Copy

```
5
5 12
3 2 4 1 8
4 4 2 4 1
4 8
5 4 1 2
6 2 3 1
3 12
7 9 10
2 2 4
1 10
11
1
7 10
2 6 3 1 5 10 6
72 24 24 12 4 4 2
```

output Copy

```
3
2
1
0
3
```

Note

In the first test case, Luca can select the subarray with $l = 1$ and $r = 3$.

In the second test case, Luca can select the subarray with $l = 3$ and $r = 4$.

In the third test case, Luca can select the subarray with $l = 2$ and $r = 2$.

Codeforces Round 898 (Div. 4)
Finished
Practice

→ 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

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

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

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
266768556	Jun/22/2024 01:32	Accepted
266767815	Jun/22/2024 01:15	Wrong answer on test 2
266767507	Jun/22/2024 01:09	Accepted
266767470	Jun/22/2024 01:09	Wrong answer on test 2
266767435	Jun/22/2024 01:08	Accepted
266763844	Jun/22/2024 00:02	Wrong answer on test 2
266763613	Jun/21/2024 23:58	Wrong answer on test 2

→ Problem tags

binary search greedy math two pointers *1300

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)