

F. Magic Powder - 2

time limit per test: 1 s.
memory limit per test: 256 MB

Waking up in the morning, Apollinaria decided to bake cookies. To bake one cookie, she needs n ingredients, and for each ingredient she knows the value a_i — how many grams of this ingredient one needs to bake a cookie. To prepare one cookie Apollinaria needs to use all n ingredients.

Apollinaria has b_i gram of the i -th ingredient. Also she has k grams of a magic powder. Each gram of magic powder can be turned to exactly 1 gram of any of the n ingredients and can be used for baking cookies.

Your task is to determine the maximum number of cookies, which Apollinaria is able to bake using the ingredients that she has and the magic powder.

Input

The first line contains two positive integers n and k ($1 \leq n \leq 100\,000, 1 \leq k \leq 10^9$) — the number of ingredients and the number of grams of the magic powder.

The second line contains the sequence a_1, a_2, \dots, a_n ($1 \leq a_i \leq 10^9$), where the i -th number is equal to the number of grams of the i -th ingredient, needed to bake one cookie.

The third line contains the sequence b_1, b_2, \dots, b_n ($1 \leq b_i \leq 10^9$), where the i -th number is equal to the number of grams of the i -th ingredient, which Apollinaria has.

Output

Print the maximum number of cookies, which Apollinaria will be able to bake using the ingredients that she has and the magic powder.

Examples

input

1 1000000000
1
1000000000

output

2000000000

input

10 1
1000000000 1000000000 1000000000 1000000000 1000000000 1000000000 1000000000 1000000000 1000000000
1000000000
1 1 1 1 1 1 1 1 1 1

output

0

input

3 1
2 1 4
11 3 16

output

4

input

4 3
4 3 5 6
11 12 14 20

output

3

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 #4 (Binary search , Two pointers)

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
312323355	Mar/25/2025 16:11	Accepted