



Tubes!

[All submissions](#)
[Best submissions](#)

✓ **Points:** 100 (partial)

⌚ **Time limit:** 0.1s

Java: 0.5s

Java 9: 0.5s

JavaScript: 0.2s

📄 **Memory limit:** 32M

Java: 32M

Java 9: 32M

JavaScript: 32M

✍ **Author:**

[donchominkov](#)

🏷 **Tags**

Binary Search

⬆ **Difficulty**

Intermediate

Marto is a well-known Pernik fighter. He has **N** tubes with different sizes. Marto also has **M-1** friends. His friends also need tubes for fighting.

Help Marto to cut his own tubes into exactly **M** parts with same sizes. This size should be maximal possible (bigger tube = better fighter).

Your task is to write a program that finds the biggest possible size of the **M** tubes which you can cut from the initial Marto's tubes.

Input

- Read from the standard input
- On the first input line your program should read the integer **N** – the number of Marto's tubes.
- On the second input line there will be the number **M** – the count of the tubes Marto needs.
- On the next **N** lines your program should read the sizes of the Marto's tubes Marto.
- The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

- Print to the standard output
- On the only output line you should print the maximal possible size of the **M** tubes.
- If it is impossible to cut the tubes with the given criteria write "-1" on the only output line.

Constraints

- **N** will be between 1 and 20 000, inclusive.
- **M** will be between 1 and 2 000 000 000, inclusive.
- The sizes of the tubes will be between 1 and 2 000 000 000, inclusive.

Sample Tests

Input

```
3
6
100
200
300
```

Copy

Output

100

Copy

Description

We can cut the tubes into 6 parts (each with size of 100).

Input

4
11
803
777
444
555

Copy

Output

200

Copy

Description

We can cut:

- The first tube into 5 parts (200, 200, 200, 200 and 3)
- The second tube into 4 parts (200, 200, 200 and 177)
- The third tube into 3 parts (200, 200 and 44)
- The fourth tube into 3 parts (200, 200 and 155)

After this cuts we have exactly 11 tubes with size of 200. The cuts we made are optimal.

We can't cut the tubes into 11 parts of size 201.

Comments

^
v

0

ivan.kiro

commented 2 months ago 9

Пак я писах на C++, TLE на Python. Като цяло Python е сложен в един куп с бързите езици при time limit-а тук, но трябва да му се отпусне някакво време между C++ и Java. Няколко човека май само пускат задачи на него, но все пак.