CSES Problem Set

Factory Machines

Time limit: 1.00 s **Memory limit:** 512 MB

A factory has n machines which can be used to make products. Your goal is to make a total of t products.

For each machine, you know the number of seconds it needs to make a single product. The machines can work simultaneously, and you can freely decide their schedule.

What is the shortest time needed to make t products?

Input

The first input line has two integers n and t: the number of machines and products.

The next line has n integers $k_1, k_2, \ldots, k_n$: the time needed to make a product using each machine.

Output

Print one integer: the minimum time needed to make t products.

Constraints

- $1 \le n \le 2 \cdot 10^5$
- $1 \le t \le 10^9$
- $1 \le k_i \le 10^9$

Example

Input:
```
3 7
3 2 5
```

Output:
```
8
```

Explanation: Machine 1 makes two products,

Sorting and Searching

...
Nested Ranges Check -
Nested Ranges Count -
Room Allocation -
Factory Machines -
Tasks and Deadlines -
Reading Books -
Sum of Three Values -
Sum of Four Values -
...

Your submissions

machine 2 makes four products and machine 3 makes one product.