Submit a solution for J-Robin Hood stealing the Gold

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem J: Robin Hood stealing the Gold

Robin Hood wants to steal the golden bars from the bank of High Sheriff aiming to distribute them to poor local people. There are N bags of gold bars, the i-th bag has $bags[i]$ bars. Sheriff has gone and will return in H hours.

Robin can steal K bars per hour. Each hour, he chooses a single bag of golden bars, and steals K bars from that bag. If there are less than K bars the bag, he steals them all, and won't steal any more during this hour.

Robin Hood wants to steal all of the golden bars before the Sheriff comes back.

Return the minimum number K such that Robin can steal ALL of the golden bars within H hours.

Input format

The first line of the input contains two space-separated integers $N(1 \leq N \leq 10^4), H(N \leq H \leq 10^9)$, the number of bags of golden bars and the numb of hours for which Sheriff has gone. The next line contains N space-separated integers $(1 \leq bags[i] \leq 10^9)$ denoting the number of golden bars in ea bag.

Output format

Print the minimum number K such that Robin Hood can steal all of the N golden bars within the limit of H hours.

Examples

Input

```
4 8
3 6 7 11
```

Output

```
4
```

Input

```
5 5
30 11 23 4 20
```

Output

```
30
```

Input

```
5 6
30 11 23 4 20
```

Output

```
23
```

Notes

K is Robin's speed of stealing the bars such that $\sum_{i=1}^{N} \frac{bags[i]}{K} = H$.

If Robin can finish stealing all the bars (within H hours) with speed of K, he can finish with a larger speed too.

If we let $possible(K)$ be true if and only if Robin can finish with a speed of K, then there is some X such that $possible(K) = true$ if and only if $K \geq X$.

For the first test case there is some $X = 4$ so that $possible(1) = possible(2) = possible(3) = false$, and $possible(4) = possible(5) = \cdots = true$. $K = 4$ is th minimum K such that $\frac{3}{4} + \frac{6}{4} + \frac{7}{4} + \frac{11}{4} = 1 + 2 + 2 + 3 = 8$. $K = 5$ is also a right answer but it is not a minimum K.

Submit a solution

Language: g++ - GNU C++ 11.4.0

File Choose File No file chosen

Send! Send!

Previous submissions of this problem

Run ID	Time	Size	Problem	Language	Result	Failed test	View source	View report
5277	893:21:13	866	J	g++	OK	N/A	View	View