New Biryani House

Author:
Time limit: 2 seconds
Memory limit: 256 megabytes

Inspired by the successful food business of IIUC's "Kashbon", Salim Miya, a witty person, quickly grabbed the opportunity to build a biryani house beside Kashbon for the IIUCians. He sells ***n*** types of biryani, i^{th} type produces p_i profit ***(1 <= i <= n, 1 <= p_i <= 100000000)***.

However, Salim Miya does not receive the entire profit amount from each biryani type. Because when he initially set up the biryani house, instead of directly purchasing a large room, he made a deal with the room owner. According to the agreement, Salim Miya keeps an amount ***x*** from the profit of each biryani type, and the remaining amount is given to the room owner. This arrangement ensures that the room owner receives at least a total of ***m*** money.

Salim Miya aims to maximize the value of ***x***. By doing so, he can increase his own earnings while ensuring that the room owner's condition is met. Your task is to assist Salim Miya in determining the optimal value of ***x***.

The calculation of the first testcase is given below:

Profit	23	5	17	20	10	
x	15		15	15		
Owner gets	8		2	5		= 15 Taka

Input:

The input consists of two lines:

- The first line contains two space-separated integers, ***n*** and ***m***, representing the number of biryani types ***(1 <= n <= 1000000)*** and the minimum total amount the room owner should receive ***(1 <= m <= 2000000000)***.
- The second line contains ***n*** space-separated positive integers less than ***1000000000***, the profit of each type of biryani. The sum of all profits will exceed ***m***, thus the owner will always be able to obtain the required amount of money.

Output

The output consists of a single integer, which is the maximum value of ***x*** that satisfies the given conditions.

Examples

Input	Output
5 14 **23 5 17 20 10**	**15**
4 26 **6 3 8 12**	**0**
6 20 **50 12 27 9 14 2**	**30**