Problem F. Fair splitting

You and I have a stack of n cards. In the i-th ($1 \leq i \leq n$) card from the top, an integer a_i is written. We decided to share these cards in the following process:

1. I take some number of cards from the top of the stack.
2. You take all the remaining cards.

Because we want to *share* the cards, you and I must take at least one card from the stack.

We want to split the card as fair as possible. So, let's define the sum of the integers on my cards as m and the sum of the integers on your cards as y. As you can see, we would like to minimize the value of $|m - y|$, just to be fair.

Given the integers written in each card, write a program that finds the minimum value of $|m - y|$.

Input

Your input consists of an arbitrary number of records, but no more than 5.

Each record consists of two lines. The first line contains a positive integer n ($2 \leq n \leq 200,000$). The second line contains n integers $a_1, a_2, \ldots, a_n$ ($-10^9 \leq a_i \leq 10^9$) The end of input is indicated by a line containing only the value -1.

Output

For each input record, print the minimum value of $|m - y|$. Note that you may need to use 64-bit type integer to store this value, and usually in contests, the authors don't give this information.

Example

Standard input	Standard output
6	1
1 2 3 4 5 6	2
2	
5 7	
-1	

Explanation of the example

For the first example: $m = 1 + 2 + 3 + 4 = 10, y = 5 + 6 = 11$.

Time Limit

1 second.