A customer may pay one or more open invoices with a single payment. If the payment exactly equals a single invoice or any combination of open invoices, these invoices are paid, reducing their balance to zero.  If no match is found, the payment is applied to the oldest invoices.



Task

Write a program that:

1. Accepts a payment amount and open invoice amounts.
2. Pays the invoices, either selecting only those that exactly match the payment amount, or paying as many and as much of the oldest invoices.
3. Outputs resulting balance of the payment and the invoices.

When a payment can pay exactly one or more invoices, the program must apply to only the invoices whose total exactly equals the payment amount. In case of tie, the oldest invoice(s) are paid first. If an exact match cannot be found, the program must apply the payment to the oldest invoice(s) until all of the payment amount is applied. See below for examples.

Input

The input is a series of integers, each separated with a space.  The first number is the payment amount, followed by one or more invoice amounts. The program must accept from 1 to 15 invoices.

Owing to the absence of built-in money or decimal types in many languages, all amounts (input and output) are represented with integers.

A valid payment amount is in the range 1 to 1000000.

A valid invoice amount is in the range 1 to 10000.

The entire input sequence is submitted by an end-of-line (e.g., pressing the Enter key.)

Output

The new balance of the payment and invoices are displayed, in the same order as input.  Each number is separated with a space.

If  the input does not follow any of the above requirements, output only the string “ERROR”.

Example

|  |  |  |
| --- | --- | --- |
|  |  | **Note(reference only)** |
| ***Input*** | 1000 1234 500 500 | 1000 exactly pays 500 + 500, leaving zero of each. 1234 is unchanged. |
| ***Output*** | 0 1234 0 0 |
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|  |  |
| ***Input*** | 1000 1234 678 282 | No exact match, payment applied to oldest. |
| ***Output*** | 0 234 678 282 |
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|  |  |
| ***Input*** | 1000 A B C 5 | Invalid input data |
| ***Output*** | ERROR |
| ***Input*** | 1000, 500 500 | Invalid input data |
| ***Output*** | ERROR |
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