

C - 駒の移動 / Moving a Piece

Time limit : 2sec / Memory limit : 1024MB

Score : 100 points

Problem Statement

You have just placed a piece at point $x=0$ on a one-dimensional number line. You are also given T integers: a_1, \dots, a_T . You will repeat the operation described below indefinitely. In one operation, you move the piece T times, as follows:

Operation

- Move the piece by a_1 in the positive x -direction. (If a_1 is negative, this is equivalent to moving the piece by $-a_1$ in the negative x -direction.)
- Move the piece by a_2 in the positive x -direction. (If a_2 is negative, this is equivalent to moving the piece by $-a_2$ in the negative x -direction.)

:

- Move the piece by a_T in the positive x -direction. (If a_T is negative, this is equivalent to moving the piece by $-a_T$ in the negative x -direction.)

How many times will the piece be moved before the x -coordinate of the piece becomes S or greater for the first time? If the x -coordinate of the piece never becomes S or greater after any number of operations, print -1 instead.

Constraints

- $1 \leq T \leq 10^5$
- $1 \leq S \leq 10^9$
- $-10^9 \leq a_i \leq 10^9$
- $a_i \neq 0$
- All values in input are integers.

Input

Input is given from Standard Input in the following format:

T S
 a_1 ... a_T

Output

Print the number of times that the piece will be moved before the x -coordinate of the piece becomes S or greater for the first time. If the x -coordinate of the piece never becomes S or greater after any number of operations, print -1 instead.

Sample Input 1

3 10
4 -3 2

Copy

Sample Output 1

7

Copy

Each time you move the piece, the x -coordinate of the piece changes as follows: 4,1,3,7,4,6,10,... After you move the piece for the seventh time, the x -coordinate of the piece becomes 10 or greater for the first time.

Sample Input 2

3 20
10 9 -19

Copy

Sample Output 2

-1

Copy

Each time you move the piece, the x -coordinate of the piece changes as follows: 10,19,0,10,19,0,... However, after how many times you move the piece, the x -coordinate of the piece never becomes 20 or greater.

Sample Input 3

4 15
7 -3 12 -20

Copy

Sample Output 3

3

Copy

Each time you move the piece, the x -coordinate of the piece changes as follows: 7,4,16,-4,3,0,12,... After you move the piece for the third time, the x -coordinate of the piece becomes 15 or greater for the first time.

Submit

Remain