

You are given an integer array `nums` and an integer `x`. In one operation, you can either remove the leftmost or the rightmost element from the array `nums` and subtract its value from `x`. Note that this modifies the array for future operations. Return the minimum number of operations to reduce `x` to exactly 0 if it is possible, otherwise, return -1.

Input

First line contains `n` and `x` where `n` is the number of elements and `x` is the integer.

Second line contains space separated `nums`.

Output

Integer

Input	Output	Explanation
5 5 1 1 4 2 3	2	The optimal solution is to remove the last two elements to reduce <code>x</code> to zero.
6 10 3 2 20 1 1 3	5	The optimal solution is to remove the first 2 elements and last 3 elements.