I. Segment with the Required Subset

time limit per test: 1 second

memory limit per test: 1024 megabytes

Given an array of n integers a_i. Let's say that a segment of this array $a[l..r]$ is good if on this segment it is possible to choose a certain set of numbers whose sum is equal to s. Your task is to find the shortest good segment.

Input

The first line contains integers n and s ($1 \le n \le 10^5$, $1 \le s \le 1000$). The second line contains numbers a_i ($1 \le a_i \le s$).

Output

Print one number, the minimum length of a good segment. If there is no good segment, print -1.

Example

input	Copy
10 100 14 33 22 21 11 5 13 28 61 2	
output	**Copy**
5	