

## E. Permutation by Sum

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

A permutation is a sequence of  $n$  integers from 1 to  $n$ , in which all the numbers occur exactly once. For example,  $[1]$ ,  $[3, 5, 2, 1, 4]$ ,  $[1, 3, 2]$  are permutations, and  $[2, 3, 2]$ ,  $[4, 3, 1]$ ,  $[0]$  are not.

Polycarp was given four integers  $n, l, r$  ( $1 \leq l \leq r \leq n$ ) and  $s$  ( $1 \leq s \leq \frac{n(n+1)}{2}$ ) and asked to find a permutation  $p$  of numbers from 1 to  $n$  that satisfies the following condition:

- $s = p_l + p_{l+1} + \dots + p_r$ .

For example, for  $n = 5$ ,  $l = 3$ ,  $r = 5$ , and  $s = 8$ , the following permutations are suitable (not all options are listed):

- $p = [3, 4, 5, 2, 1]$ ;
- $p = [5, 2, 4, 3, 1]$ ;
- $p = [5, 2, 1, 3, 4]$ .

But, for example, there is no permutation suitable for the condition above for  $n = 4$ ,  $l = 1$ ,  $r = 1$ , and  $s = 5$ .

Help Polycarp, for the given  $n, l, r$ , and  $s$ , find a permutation of numbers from 1 to  $n$  that fits the condition above. If there are several suitable permutations, print any of them.

### Input

The first line contains a single integer  $t$  ( $1 \leq t \leq 500$ ). Then  $t$  test cases follow.

Each test case consist of one line with four integers  $n$  ( $1 \leq n \leq 500$ ),  $l$  ( $1 \leq l \leq n$ ),  $r$  ( $l \leq r \leq n$ ),  $s$  ( $1 \leq s \leq \frac{n(n+1)}{2}$ ).

It is guaranteed that the sum of  $n$  for all input data sets does not exceed 500.

### Output

For each test case, output on a separate line:

- $n$  integers — a permutation of length  $n$  that fits the condition above if such a permutation exists;
- $-1$ , otherwise.

If there are several suitable permutations, print any of them.

### Example

input	Copy
5 5 2 3 5 5 3 4 1 3 1 2 4 2 2 2 2 2 1 1 3	
output	Copy
1 2 3 4 5 -1 1 3 2 1 2 -1	

### Codeforces Round #713 (Div. 3).

**Contest is running**

01:57:36

Contestant



### → Submit?

Language: GNU G++14 6.4.0

 Choose file:  선택된 파일 없음

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