Lisseq

Strong is a very strong weight-lifter. He has had many impressive performances, including one-handedly lifting 15 people. Currently, he is just doing normal weight-lifting.

Strong has n weights. The ith weight weighs k_i kg. Everyday, he picks one **longest increasing subsequence (LIS)** of his weights and lift them. To make it less boring, he doesn't pick the same LIS on any 2 different days. After T days of lifting, Strong has ran out of ways to choose a LIS, and decided to move on to *Clay pot* lifting.

You want to be as strong as Strong, so you have asked him for the weights.

Strong answered:

"If you want these weights, determine the weight of such weights!"

Input

Each input contains multiple tests.

The first line of the input contains 3 numbers L, R, N

Output

For each T from L to R, you have to determine the answer for T. In other words, you have to find a sequence of length N that satisfies: Strong could use these weight for a maximum of exactly T days, if he picks a different LIS everyday. If there are multiple answers, you can print any.

Constraints

- $L, R \leq 1,000,000,000$, $R = L + 99$
- $N = 100$
- The weight of the weights must be between 0 and 100.

Subtask

- Subtask 1 (15%): $L, R \leq 1,000$
- Subtask 2 (30%): $L, R \leq 50,000$
- Subtask 3 (55%): No additional contraints.

Sample

Input

3 5 5

Output

2 1 0 3 4
3 2 1 0 4
1 1 1 1 1

Note: The sample test is intentionally made not satisfactory to the constraints, and is not used for marking.