

# Minimum Permutation

[English](#)

[Vietnamese](#)

The inversion number of an integer sequence  $a_1, a_2 \dots a_n$  is the number of pairs  $(a_i, a_j)$  that satisfy  $i < j$  and  $a_i > a_j$ . Given  $n$  and the inversion number  $m$ , your task is to find the smallest permutation of the set  $\{1, 2 \dots n\}$ , whose inversion number is exactly  $m$ . A permutation  $a_1, a_2 \dots a_n$  is smaller than  $b_1, b_2 \dots b_n$  if and only if there exists an integer  $k$  such that  $a_j = b_j$  for  $1 \leq j < k$  but  $a_k < b_k$ .

## Input

The input consists of several test cases. Each line of the input contains two integers  $n$  and  $m$ . Both of the integers at the last line of the input is  $-1$ , which should not be processed. You may assume that  $1 \leq n \leq 50000$  and  $0 \leq m \leq 1/2n(n - 1)$ .

## Output

For each test case, print a line containing the smallest permutation as described above, separates the numbers by single spaces.

## Sample

### Input

```
5 9
7 3
-1 -1
```

### Output

```
4 5 3 2 1
1 2 3 4 7 6 5
```