Minimum Permutation

English Vietnamese

The inversion number of an integer sequence a1, a2 ... an is the number of pairs (ai, aj) that satisfy i < j and ai > aj . Given n and the inversion number m, your task is to find the smallest permutation of the set { 1, 2 ... n } , whose inversion number is exactly m. A permutation a1, a2 ... an is smaller than b1, b2 ... bn if and only if there exists an integer k such that aj = bj for 1 ≤ j < k but ak < bk.

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 ≤ n ≤ 50000 and 0 ≤ m ≤ 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
```