

Problem B. Beautiful Now

Input file: standard input
Output file: standard output
Time limit: 2.5 seconds
Memory limit: 256 megabytes

Anton has a positive integer n , however, it quite looks like a mess, so he wants to make it beautiful after k swaps of digits.

Let the decimal representation of n as $(x_1x_2\cdots x_m)_{10}$ satisfying that $1 \leq x_1 \leq 9$, $0 \leq x_i \leq 9$ ($2 \leq i \leq m$), which means $n = \sum_{i=1}^m x_i 10^{m-i}$. In each swap, Anton can select two digits x_i and x_j ($1 \leq i \leq j \leq m$) and then swap them if the integer after this swap has no leading zero.

Could you please tell him the minimum integer and the maximum integer he can obtain after k swaps?

Input

The first line contains one integer T , indicating the number of test cases.

Each of the following T lines describes a test case and contains two space-separated integers n and k .

$1 \leq T \leq 100$, $1 \leq n, k \leq 10^9$.

Output

For each test case, print in one line the minimum integer and the maximum integer which are separated by one space.

Example

standard input	standard output
5	12 21
12 1	123 321
213 2	298944353 998544323
998244353 1	238944359 998544332
998244353 2	233944859 998544332
998244353 3	