

Minimum and maximum numbers

Given N and K , find the smallest and the largest positive integers, each with exactly N digits and having exactly K distinct digits (0 - 9). Leading zeroes are not allowed !

Input

First line contains T , the number of test cases (about 200). Each of the next T lines contains 'N K', where $1 \leq N \leq 18$ and $1 \leq K \leq 10$. Input is given such that the answer will always exist.

Output

For each test case, output the two numbers, separated by a space, in a new line.

Example

Input:

```
2
1 1
3 3
```

Output:

```
1 9
102 987
```