7. Number Systems

Program Name: Numbers.java   Input File: numbers.dat

Different number systems use different symbols to create numbers and order their numbers based on the place value of the different symbols. The number systems for this problem will use a subset of the digits normally used in base ten, the digits 0 through 9, and the value of each digit is the same as in base ten. Each number in the number system must contain each digit in the number system at least once and leading zeros are not used. Some examples follow:

Number System	Digits Used	First Five Numbers
THRONE	1 3	13 31 113 131 133
TWIXEZ	0 2 6	206 260 602 620 2006
FOURNION	1 4 9	149 194 419 491 914

Input
The first line of input will contain a single integer n that indicates the number of number systems to be examined. Each the following n lines will contain d unique digits followed by an ordinal number that indicates which number in the number system that you are to find. Each of the digits and the ordinal will be separated by a space.

Note: There will be no numbers in a number system larger than 100000.

Output
For each number system, you will print the desired number on a single line.

Example Input File
```
4
0 2 6 7
1 7 4 8
3 4 8
7 6 7
```

Example Output to Screen
```
2060
1174
443
767
```