A positive integer N is a super divisible number in the base B if and only if the number formed by the k most significant base-B digits of N is divisible by k, for all k between 1 and the number of base-B digits of N. (By definition, the most significant digit of N can not be 0.)

For example, 2220301_4 is a base-4 super divisible number because 2_4 is divisible by 1, 22_4 is divisible by 2, 222_4 is divisible by 3, 2220_4 is divisible by 4, 22203_4 is divisible by 5, 222030_4 is divisible by 6, and 2220301_4 is divisible by 7.

Find the largest super divisible number of a given base which uses only digits from a given list of digits.

Input

The input file contains several test cases. For each of them, the program input is a single line containing the base and the list of valid digits. The base will always be an integer between 4 and 10. The list of valid digits will have a length of at most 10, and may contain repeated digits (the repetitions should be ignored).

Output

For each test case, the program output is a single line containing the largest super divisible number of the given base which uses only the digits given on the input. It is known that the largest super divisible number will not have more than 50 digits.

Examples

Input	Output
5 031322	2011021100
7 01356	660060063531
9 02468	886266840866066000
10 01	10
10 123	3212
10 9876543210	360852885036840786036725

Sample Input

```
4 0123
10 010011
```

Sample Output

```
2220301
10
```