Permutative Numbers
Problem ID: a10p08permutativenumbers

Let us say two numbers are permutations of each other if it is possible to rearrange the digits of one to get the other.

Furthermore, let n be a number, and let d be the number of digits in n. Let us say that n is *permutative* if all of its first d multiples are permutations of n.

For example, let $n = 1035$. Then we have $d = 4$, and the first 4 multiples of n are:

$$1 \cdot 1035 = 1035$$
$$2 \cdot 1035 = 2070$$
$$3 \cdot 1035 = 3105$$
$$4 \cdot 1035 = 4140$$

Even though one of those, $3 \cdot 1035 = 3105$, is a permutation of 1035, the number 1035 is not permutative, since not all of the four multiples are permutations of 1035.

On the other hand, let $n = 142857$. It has $d = 6$ digits, and its first 6 multiples are

$$1 \cdot 142857 = 142857$$
$$2 \cdot 142857 = 285714$$
$$3 \cdot 142857 = 428571$$
$$4 \cdot 142857 = 571428$$
$$5 \cdot 142857 = 714285$$
$$6 \cdot 142857 = 857142$$

All of these numbers are permutations of 142857, hence 142857 is permutative.

Write a program that, given an integer s, prints all permutative numbers from 10 up to s inclusive.

The program should be split into functions, with a function called `is_permutative(n)`, which takes a parameter n and returns `True` or `False` based on whether n is permutative.

Hint: You can convert an integer to a string to get a string of digits, and then the length of the string is the number of digits in the integer.

Input

Input consists of one line, containing the integer s, where $10 \le s \le 10^6$.

Output

Output consists of l lines, where l is the number of permutative numbers from 10 to s. The i-th line of the output should contain the i-th permutative number.

Sample Input 1	Sample Output 1
100000	

Sample Input 2	Sample Output 2
1000000	142857

Sample Input 3	Sample Output 3
6	