Project Euler #98: Anagramic squares

This problem is a programming version of Problem 98 from projecteuler.net

Some square numbers are numerical anagrams of other square numbers. For instance, $1296 = 36^2$ and $9216 = 96^2$. The set of square anagrams of 1296 is $[1296, 9216]$.

For each value of N, we wish to know the largest set of square anagrams for a number with N digits. Print out the largest number of this set. If the largest set is not unique, pick whichever one has the largest maximum element.

Input Format

The only number N - the length of the needed anagram.
$3 \leq N \leq 13$

Output Format

The N-digit number which is the largest square with the most anagramic squares of length N.

Sample Input

```
4
```

Sample Output

```
9216
```