

Project Euler #98: Anagrammic squares

Problem Statement

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 anagrammic squares of length N .

Sample Input

4

Sample Output

9216