Bulgarian OI '09 P5 - Special Sequence

Time limit: 0.6s **Memory limit:** 32M

2009 Bulgarian Olympiad in Informatics

Consider the positive integers whose squares contain only (and all) the digits $0, 4, 9$. Let's call them "special". For example, $2\,120$ is special, because $2\,120^2 = 4\,494\,400$ and the square contains only (and all) of $0, 4, 9$. 97 is also special: $97^2 = 9\,409$. 13 and 7 are not special - $13^2 = 169$ (1 and 6 aren't allowed) and $7^2 = 49$ (there's no 0).

Consider the sequence of special numbers, in order:

$$\{70, 97, 700, 970, 997, 2\,120, 3\,148, 7\,000, 9\,700, 9\,970, 9\,997, 20\,102, 21\,200, 31\,480, 70\,000, 97\,000, \ldots\}$$

Write a program to find the N^{th} number in this sequence.

Input Specification

The positive integer $N \leq 250$, on a single line.

Output Specification

The N^{th} number in the special sequence (starting from 1).

Sample Input

```
12
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Sample Output

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20102
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