

Project Euler #62: Cubic permutations

Problem Statement

This problem is a programming version of [Problem 62](#) from [projecteuler.net](#)

The cube, 41063625 (345^3), can be permuted to produce two other cubes: 56623104 (384^3) and 66430125 (405^3).

In fact, 41063625 is the smallest cube which has exactly three permutations of its digits which are also cube.

You are given N , find the smallest cube for which exactly K permutations of its digits are cube of some number which is ($< N$). If there are multiple sets, print the minimal element of each in sorted order.

Input Format

Input contains two space separated integers N and K .

Output Format

Print the answer corresponding to the test case. If there are more than one number, print them on separate lines.

Constraints

$$1000 \leq N \leq 10^6$$

$$3 \leq K \leq 49$$

Sample Input

```
1000 3
```

Sample Output

```
41063625
```