

One Place 2

Input file: **standard input**
Output file: **standard output**
Time limit: **1 second**
Memory limit: **256 megabytes**

Given an integer n , you need to find how many tuples of integers (x, y, z) such that $1 \leq x, y, z \leq n$ and $x^{y^z} \equiv k \pmod{10}$ for $k = 0, 1, \dots, 9$.

Input

A single integer n ($1 \leq n \leq 10^6$).

Output

Ten integers, the i -th of them denotes the answer when $k = i - 1$.

Example

standard input	standard output
2	0 4 2 0 1 0 1 0 0 0