

The **number of divisor** function or $d(n)$ is a very interesting function in number theory. It denotes the number of positive divisors of a particular number. For example $d(24) = 8$ as 24 has eight divisors 1, 2, 3, 4, 6, 8, 12 and 24. In mathematics factorial of a positive integer number n is written as $n!$ and is defined as below:

$$n! = 1 \times 2 \times 3 \times \dots \times n = \prod_{i=1}^n i$$

Another interesting function $AF(n)$ (Again factorial in short) is defined as:

$$AF(n) = 1! \times 2! \times 3! \times \dots \times n! = \prod_{i=1}^n i!$$

Given n , your job is to find the value of $d(AF(n))$.

Input

The input file contains at most 101 lines of inputs. Each line contains an integer n ($0 < n < 5000001$). Input is terminated by a line containing a single zero. This value should not be processed.

Output

For each line of input produce one line of output.

This line contains the *modulo* 100000007 ($10^8 + 7$) of $d(AF(n))$.

Sample Input

```
1
2
3
4
100
0
```

Sample Output

```
1
2
6
18
59417661
```