

Adaptive Mechanized Calcium Chlorohypochlorite

Time limit: 1.0s **Memory limit:** 256M

You are given a multiplicative function $f(x)$, where $f(p^k) = p^k - p^{k-1}$ when p is prime. Determine $\sum_{i=1}^N f(i)$ modulo $10^9 + 7$.

Input Specification

The only line contains an integer, N ($1 \leq N \leq 10^{10}$).

Output Specification

Output $\sum_{i=1}^N f(i)$ modulo $10^9 + 7$.

Sample Input

5

Sample Output

10