

Problem G. A Boring Math Problem

Define function $f(n)$ as the sum of all factors of n , for example $f(1) = 1$, $f(5) = 1 + 5 = 6$, $f(6) = 1 + 2 + 3 + 6 = 12$.

Given n and k , you need to calculate

$$\sum_{i=1}^n f(i^k)$$

Since the answer is too large, you need to output the remainder of the answer divided by $10^9 + 7$.

Input

One line, two numbers n and k , ($1 \leq n, k \leq 10^7$).

Output

One line indicates the answer.

Example

standard input	standard output
2 2	8

Hint

$$f(1^2) + f(2^2) = (1) + (1 + 2 + 4) = 8$$