



## Problem L. LCM Sum

Input file: *standard input*  
Output file: *standard output*  
Time limit: 7 seconds  
Memory limit: 512 mebibytes

Are you sick of solving problems like computing the prefix sum of a random number theory function? As a terrible problem writer, here I present another one for you.

Compute

$$\sum_{x=1}^n \text{lcm}(x, x+1, \dots, x+k).$$

The answer can be large, so output it modulo  $10^9 + 7$ .

### Input

The first line contains two integers  $n, k$  ( $1 \leq n \leq 10^{18}$ ,  $0 \leq k \leq 30$ ).

### Output

Output one integer: the answer.

### Examples

standard input	standard output
10 3	18936
10000 6	43482752
1000000000 15	688102997