You are given natural numbers $n$ and $c$.

Let $x$ be a number such that $x^{1}+x^{-1}=c$ (such $x$ is guaranteed to exist).

Find the value of $x^{n}+x^{n-1}+…+x^{1}+x^{0}+x^{-1}+x^{-2}+…+x^{-n}$.

**Input**

The only line of the file **equation.in** contains the numbers$ n$ and $c$.

**Output**

It is provable that for all possible $x$ the required value is equal and can be represented as a rational fraction $\frac{s}{t}$. Let $M=900 000 011$. The tests will be selected so that $t$ and $M$ have no common divisors. On the single line of the file **equation.out**, print $s\*t^{-1}$ modulo $M$.

**Constraints**

$$2\leq c\leq 10^{18}$$

$$1\leq n\leq 10^{18}$$

 **Time limit: 0.2 sec.**

 **Memory limit: 256 MB.**

**Sample test**

|  |  |
| --- | --- |
| **Input (equation.in)** | **Output (equation.out)** |
| 1 3 | 4  |