```cpp
#include <iostream>

using namespace std;

typedef int Matrix[2][2];

void product(int m, const Matrix& a, const Matrix& b, Matrix& c) {
  for (int i = 0; i < 2; ++i)
    for (int j = 0; j < 2; ++j) {
      c[i][j] = 0;
      for (int k = 0; k < 2; ++k)
        c[i][j] = (c[i][j] + a[i][k] * b[k][j]) % m;
    }
}

void identity(Matrix& b) {
  b[0][0] = b[1][1] = 1;
  b[0][1] = b[1][0] = 0;
}

void power(int n, int m, const Matrix& a, Matrix& b) {

  if (n == 0)
    identity(b);
  else {
    if (n%2 == 0) {
      Matrix c;
      power(n/2, m, a, c);
      product(m, c, c, b);
    }
    else {
      Matrix c, d;
      power(n/2, m, a, c);
      product(m, c, c, d);
      product(m, a, d, b);
    }
  }
}

int main() {
  Matrix  a;
  a[0][0] = 1;        a[0][1] = 1;
  a[1][0] = 1;        a[1][1] = 0;
  int n, m;
  while (cin >> n >> m) {
    Matrix b;
    power(n, m, a, b);
    cout << b[1][0] << endl;
  }
}
```