// C++ program to find (a^b) mod m for a large 'a'

#include<bits/stdc++.h>

using namespace std;

// utility function to calculate a%m

unsigned int aModM(string s, unsigned int mod)

{

    unsigned int number = 0;

    for (unsigned int i = 0; i < s.length(); i++)

    {

        // (s[i]-'0') gives the digit value and form

        // the number

        number = (number\*10 + (s[i] - '0'));

        number %= mod;

    }

    return number;

}

// Returns find (a^b) % m

unsigned int ApowBmodM(string &a, unsigned int b,

                                  unsigned int m)

{

    // Find a%m

    unsigned int ans = aModM(a, m);

    unsigned int mul = ans;

    // now multiply ans by b-1 times and take

    // mod with m

    for (unsigned int i=1; i<b; i++)

        ans = (ans\*mul) % m;

    return ans;

}

// Driver program to run the case

int main()

{

    string a = "987584345091051645734583954832576";

    unsigned int b=3, m=11;

    cout << ApowBmodM(a, b, m);

    return 0;

}