#include <bits/stdc++.h>

#include <cmath>

#define gc getchar\_unlocked

using namespace std;

int q,xA,xB,alpha,k1,k2,yA,yB,rslt,rslt\_1,rslt\_2,rslt\_3;

int userA(int,int);

int userB(int,int);

int userA(int alpha,int q)

{

rslt = alpha % q;

rslt\_1 =1;

for(int i=0;i<xA;i++){

rslt\_1 \*= rslt;

rslt\_1 = rslt\_1 % q;

}

return rslt\_1;

}

int userB(int alpha,int q)

{

rslt\_2 = alpha % q;

rslt\_3 =1;

for(int i=0;i<xB;i++){

rslt\_3 \*= rslt\_2;

rslt\_3 = rslt\_3 % q;

}

return rslt\_3;

}

int main(int argc,char \*\*argv)

{

cout<<"Enter the values of alpha and prime number Q : "<<endl;

cin>>alpha>>q;

cout<<"Enter xA and xB :"<<endl;

cin>>xA>>xB;

yA=userA(alpha,q);

cout<<endl<<"Ya is: "<<yA;

yB = userB(alpha,q);

cout<<endl<<"Yb is: "<<yB;

k1 = userA(yB,q);

cout<<endl<<"k1 is: "<<k1;

k2 = userB(yA,q);

cout<<endl<<"k2 is: "<<k2;

return 0;

}