**Problem 3.**

import java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStreamReader;

import java.util.StringTokenizer;

public class Little\_Panda\_Power {

private static long x,y;

public static void main(String[] args) throws NumberFormatException, IOException {

// TODO Auto-generated method stub

BufferedReader br=new BufferedReader(new InputStreamReader(System.in));

int T=Integer.parseInt(br.readLine().trim());

String s;

StringTokenizer st;

while(T>0)

{

StringBuilder s1=new StringBuilder();

if((s=br.readLine())!=null)

{

st=new StringTokenizer(s);

long A=Long.parseLong(st.nextToken());

long B=Long.parseLong(st.nextToken());

long N=Long.parseLong(st.nextToken());

long ans=1l;

if(B<0)

{

egcd(A,N);

if(x<0)

x+=N;

B=B\*-1l;

ans=pow(x,B,N);

//System.out.println(x+" "+y);

}

else

{

ans=pow(A,B,N);

}

s1.append(ans+"\n");

T--;

}

System.out.print(s1);

}

}

private static long pow(long b, long m, long n) {

// TODO Auto-generated method stub

long a=1l;

while(m>0)

{

if((m&1)==1)

{

a=(a\*b)%n;

}

b=(b\*b)%n;

m>>=1;

}

return a;

}

private static void egcd(long a,long n) {

// TODO Auto-generated method stub

if(a%n==0)

{

x=0;

y=1;

return;

}

egcd(n,a%n);

long temp=x;

x=y;

y=temp-y\*(a/n);

}

}