hide handkerchief

The Children’s Day has passed for some days .Has you remembered something happened at your childhood? I remembered I often played a game called hide handkerchief with my friends.

Now I introduce the game to you. Suppose there are N people played the game ,who sit on the ground forming a circle ,everyone owns a box behind them .Also there is a beautiful handkerchief hid in a box which is one of the boxes .

Then Haha(a friend of mine) is called to find the handkerchief. But he has a strange habit. Each time he will search the next box which is separated by M-1 boxes from the current box. For example, there are three boxes named A,B,C, and now Haha is at place of A. now he decide the M if equal to 2, so he will search A first, then he will search the C box, for C is separated by 2-1 = 1 box B from the current box A . Then he will search the box B ,then he will search the box A.

So after three times he establishes that he can find the beautiful handkerchief. Now I will give you N and M, can you tell me that Haha is able to find the handkerchief or not. If he can, you should tell me "YES", else tell me "POOR Haha".

Input

There will be several test cases; each case input contains two integers N and M, which satisfy the relationship: 1<=M<=100000000 and 3<=N<=100000000. When N=-1 and M=-1 means the end of input case, and you should not process the data.

Output

For each input case, you should only the result that Haha can find the handkerchief or not.

Sample Input

3 2

-1 -1

Sample Output

YES

题目意思不太好看懂，是n个人围成一个圈，大家玩找手帕游戏，手帕藏在某一个人的箱子里，Haha来找，每一次他都会跳过m-1个人。问你Haha是不是一定能找到手帕。因为Haha找的次数是无限的，可以永远找下去，所以，只要他能把所有的人都找一遍就一定能找到。但按照他的这种找法，如果n和m不互质的话，不互质就会出现某些人是永远不会找。所以看一下 n和m的最大公约数是否为1就可以了。

#include<iostream>

#include<cstdio>

#include<math.h>

using namespace std;

int gcd(int a,int b)

{

if(a%b==0) return b;else return(gcd(b,a%b));

}

int main()

{

// freopen("input.txt","r",stdin);

int n,m;

while(cin>>n>>m)

{

if(n==-1 && m==-1) return 0;

if(gcd(n,m)==1)cout<<"YES"<<endl;else cout<<"POOR Haha"<<endl;

}

return 0;

}