#include <iostream>

using namespace std;

//Detection :

class Detect

{

int p,r;

public:

void setXpower(int p)

{

this -> p=p;

}

int getXpower()

{

return p;

}

void setYpower(int r)

{

this -> r=r;

}

int getYpower()

{

return r;

}

};

//detection ends

int main()

{

//detection

float p,r;

cout<<"enter the power of X :"<<endl;

cin>>p;

cout<<"enter the power of Y :"<<endl;

cin>>r;

Detect power;

power.setXpower(p);

power.setYpower(r);

//hyperbola or ellipse detection?

if( power.getXpower()==2 && power.getYpower()==2)

{

int sign;

cout<<"are the sign of X and sign of Y same?"<<endl;

cout<<"1.Yes"<<endl;

cout<<"2.No"<<endl;

cin>>sign ;

//hyperbola detection

if(sign ==2)

{

cout<< " it's a hyperbola"<<endl ;

}

//ellipse or circle?

else if(sign ==1)

{

float coefficient;

cout<< "are the coefficients of X & Y same?"<<endl;

cout<<"1.Yes"<<endl;

cout<<"2.No"<<endl;

cin>> coefficient;

//ellipse

if(coefficient==2)

{

cout<<"it is an ellipse"<<endl;

}

if(coefficient ==1)

{

cout<<"most probably it is a circle.Sorry our program can't help you"<<endl;

}

}

}

//parabola detect

else if((power.getXpower()==1 && power.getYpower()==2) || (power.getXpower()==2&&power.getYpower()==1))

{

cout<<"it is a parabola"<<endl;

}

else

{

cout<<"wrong input"<<endl;

}

//detection ends

return 0;

}