#include<stdio.h>

#include<stdlib.h>

#include<conio.h>

#include<math.h>

float function1(float x, float y)

{

float f= x\*x+x\*y-10;

return(f);

}

float function2(float x, float y)

{

float g= y+3\*x\*y\*y-57;

return(g);

}

float funcfx(float x, float y)

{

float fx=2\*x+y;

return(fx);

}

float funcfy(float x, float y)

{

float fy=y;

return(fy);

}

float funcgx(float x, float y)

{

float gx= 3\*y\*y;

return(gx);

}

float funcgy(float x,float y)

{

return (1+6\*x\*y);

}

float det(float x,float y)

{

return((funcfx(x,y))\*(funcgy(x,y))-(funcgx(x,y))\*(funcfy(x,y)));

}

float detx(float x, float y)

{

float f,fy,g,gy;

f=function1(x,y);

g=function2(x,y);

fy=funcfy(x,y);

gy=funcgy(x,y);

float dx=f\*gy-g\*fy;

return(dx);

}

float dety(float x,float y)

{

float fx,f,gx,g;

fx=funcfx(x,y);

f=function1(x,y);

g=function2(x,y);

gx=funcgx(x,y);

float dy=fx\*g-gx\*f;

return(dy);

}

int main()

{

float D,Dx,Dy,x,y,t,s,h,k,x1,y1,xo,yo,err;

printf("Enter the intial approximations\n");

scanf("%f %f", &xo, &yo); //1.5,3.5

int i=1;

do

{

Dx= detx(xo,yo);

Dy= dety(xo,yo);

D = det(xo,yo);

h=-Dx/D;

k=-Dy/D;

x=xo+h;

y=yo+k;

printf("The value of %dth iteration is x=%d and y=%d\n",i,x,y);

i=i+1;

x1=xo;

y1=yo;

xo=x;

yo=y;

}

while(fabs(x1-xo)>0.001 && fabs(y1-yo)>0.001);

printf("The solution of the equation is\n");

printf("%f\t and\t %f\n", xo,yo);

return 0;

}

//output

//Enter the intial approximations

//1.5

//3.5

//The value of 1th iteration is x=-2147483648 and y=0

//The value of 2th iteration is x=1610612736 and y=1073741824

//The value of 3th iteration is x=0 and y=0

//The value of 4th iteration is x=0 and y=1610612736

//The value of 5th iteration is x=1610612736 and y=-1610612736

//The value of 6th iteration is x=-536870912 and y=536870912

//The solution of the equation is

//2.000049 and 2.999964