#include <iostream>

#include <math.h>

#include <graphics.h>

using namespace std;

class kochcurve

{

public:

void koch(int it,int x1,int y1,int x5,int y5)

{

int x2,y2,x3,y3,x4,y4;

int dx,dy;

if(it==0)

{

line(x1,y1,x5,y5);

}

else{

delay(10);

dx=(x5-x1)/3;

dy=(y5-y1)/3;

x2=x1+dx;

y2=y1+dy;

x3=(int)(0.5\*(x1+x5)+sqrt(3)\*(y1-y5)/6);

y3=(int)(0.5\*(y1+y5)+sqrt(3)\*(x5-x1)/6);

x4=2\*dx+x1;

y4=2\*dy+y1;

koch(it-1,x1,y1,x2,y2);

koch(it-1,x2,y2,x3,y3);

koch(it-1,x3,y3,x4,y4);

koch(it-1,x4,y4,x5,y5);

}

}

};

int main()

{

kochcurve k;

int it;

cout<<"Enter number of iteration"<<endl;

cin>>it;

initwindow(600,600);

k.koch(it,150,20,20,280);

k.koch(it,280,280,150,20);

k.koch(it,20,280,280,280);

getch();

return 0;

}