#include <iostream>

#include <math.h>

#include <graphics.h>

using namespace std;

class kochCurve

{

public:

// Function to draw the Koch curve

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

{

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

int dx, dy;

// Base case: If iteration is 0, draw a line

if (it == 0)

{

line(x1, y1, x5, y5);

}

else

{

delay(10);

// Calculate intermediate points

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;

// Recursively draw the four segments of the Koch curve

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()

{

// Create an instance of the kochCurve class

kochCurve k;

int it; // Number of iterations

cout << "Enter Number Of Iterations: ";

cin >> it;

int gd = DETECT, gm;

// Initialize the graphics mode

initgraph(&gd, &gm, NULL);

// Call the koch function to draw the Koch curve

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

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

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

// Wait for a key press before closing the graphics window

getch();

closegraph();

return 0;

}

OUTPUT:

