Приложение 1. Тесты.

>> Miss! Step: 0, pos\_i = -30.000000, pos\_j = -4.000000, l = 12.000000

Miss! Step: 1, pos\_i = 24.000000, pos\_j = 0.000000, l = 3.000000

Miss! Step: 2, pos\_i = 1.000000, pos\_j = 0.000000, l = 9.000000

Hit 0! Step: 3, pos\_i = -12.000000, pos\_j = 1.000000, l = 0.000000

Miss! Step: 4, pos\_i = -7.000000, pos\_j = 15.000000, l = -1.000000

Miss! Step: 5, pos\_i = -11.000000, pos\_j = 15.000000, l = 1.000000

Miss! Step: 6, pos\_i = -3.000000, pos\_j = 16.000000, l = -2.000000

Miss! Step: 7, pos\_i = -15.000000, pos\_j = 16.000000, l = 2.000000

Miss! Step: 8, pos\_i = 3.000000, pos\_j = 22.000000, l = 4.000000

Miss! Step: 9, pos\_i = -17.000000, pos\_j = 18.000000, l = 12.000000

Miss! Step: 10, pos\_i = 10.000000, pos\_j = 26.000000, l = -4.000000

Miss! Step: 11, pos\_i = 0.000000, pos\_j = 26.000000, l = 12.000000

Miss! Step: 12, pos\_i = -5.000000, pos\_j = 14.000000, l = 2.000000

Miss! Step: 13, pos\_i = -9.000000, pos\_j = 17.000000, l = 3.000000

Miss! Step: 14, pos\_i = -2.000000, pos\_j = 22.000000, l = 6.000000

Miss! Step: 15, pos\_i = -12.000000, pos\_j = 16.000000, l = 9.000000

Miss! Step: 16, pos\_i = 5.000000, pos\_j = 27.000000, l = 1.000000

Miss! Step: 17, pos\_i = -9.000000, pos\_j = 26.000000, l = -9.000000

Miss! Step: 18, pos\_i = -14.000000, pos\_j = 26.000000, l = -7.000000

Hit 1! Step: 19, pos\_i = -12.000000, pos\_j = 2.000000, l = 2.000000

Miss! Step: 20, pos\_i = -5.000000, pos\_j = 1.000000, l = 2.000000

Miss! Step: 21, pos\_i = -12.000000, pos\_j = 25.000000, l = 3.000000

Miss! Step: 22, pos\_i = -1.000000, pos\_j = 3.000000, l = 6.000000

Miss! Step: 23, pos\_i = -10.000000, pos\_j = 23.000000, l = 13.000000

Miss! Step: 24, pos\_i = 6.000000, pos\_j = 3.000000, l = -14.000000

Miss! Step: 25, pos\_i = 0.000000, pos\_j = 18.000000, l = 10.000000

Miss! Step: 26, pos\_i = -5.000000, pos\_j = 25.000000, l = -18.000000

Miss! Step: 27, pos\_i = -2.000000, pos\_j = 1.000000, l = -21.000000

Miss! Step: 28, pos\_i = 0.000000, pos\_j = 29.000000, l = 0.000000

Miss! Step: 29, pos\_i = -12.000000, pos\_j = 29.000000, l = 0.000000

Miss! Step: 30, pos\_i = 1.000000, pos\_j = 11.000000, l = -29.000000

Miss! Step: 31, pos\_i = 11.000000, pos\_j = 29.000000, l = -10.000000

Miss! Step: 32, pos\_i = 2.000000, pos\_j = 29.000000, l = -29.000000

Miss! Step: 33, pos\_i = 14.000000, pos\_j = 0.000000, l = -28.000000

Miss! Step: 34, pos\_i = 22.000000, pos\_j = 19.000000, l = -10.000000

Miss! Step: 35, pos\_i = 16.000000, pos\_j = 19.000000, l = -22.000000

Miss! Step: 36, pos\_i = 21.000000, pos\_j = 19.000000, l = -15.000000

Miss! Step: 37, pos\_i = 17.000000, pos\_j = 19.000000, l = -16.000000

Miss! Step: 38, pos\_i = 14.000000, pos\_j = 20.000000, l = -3.000000

Miss! Step: 39, pos\_i = -3.000000, pos\_j = 24.000000, l = -11.000000

Miss! Step: 40, pos\_i = -8.000000, pos\_j = 12.000000, l = -23.000000

Miss! Step: 41, pos\_i = -3.000000, pos\_j = 18.000000, l = -3.000000

Miss! Step: 42, pos\_i = -12.000000, pos\_j = 14.000000, l = -9.000000

Miss! Step: 43, pos\_i = -14.000000, pos\_j = 24.000000, l = -13.000000

Miss! Step: 44, pos\_i = -19.000000, pos\_j = 27.000000, l = -15.000000

Miss! Step: 45, pos\_i = -9.000000, pos\_j = 3.000000, l = -22.000000

Miss! Step: 46, pos\_i = -4.000000, pos\_j = 24.000000, l = 1.000000

Miss! Step: 47, pos\_i = -11.000000, pos\_j = 20.000000, l = -23.000000

Miss! Step: 48, pos\_i = -8.000000, pos\_j = 28.000000, l = -11.000000

Miss! Step: 49, pos\_i = -10.000000, pos\_j = 26.000000, l = -27.000000

Miss! Step: 50, pos\_i = -1.000000, pos\_j = 29.000000, l = -17.000000

The end! Total hits: 2, Step: 50, EXIT: pos\_i = -1.000000, pos\_j = 29.000000, l = -17.000000

Приложение 1. Код.

#include <stdio.h>

#include <math.h>

double Const1 = 10, Const2 = 20;

int isPointInArea(double i, double j) {

    if (i + j + Const1 <= 0 && i + j + Const2 >= 0) {

        return 1;

    }

    return 0;

}

double min(double a, double b) {

    if(a > b) {

        return b;

    }

    return a;

}

double max(double a, double b) {

    if(a > b) {

        return a;

    }

    return b;

}

int mod(int a, int b) {

    if(a >= 0) {

        return a % b;

    }

    return a % b + b;

}

int sign(double a) {

    if(a >= 0) {

        return 1;

    }

    return -1;

}

int main() {

    double i = -30, j = -4, l = 12;

    int k = 0, max\_k = 50, count = 0;

    while (k <= max\_k) {

        if (isPointInArea(i, j)) {

            printf("Hit %d! ", count);

            count += 1;

        } else {

            printf("Miss! ");

        }

        printf("Step: %d, pos\_i = %f, pos\_j = %f, l = %f\n", k, i, j, l);

        if (k == max\_k) {

            break;

        }

        double iOld = i, jOld = j;

        i = fabs(iOld - l) + min(mod(jOld, 10), mod(l + k, 10)) - 20;

        j = mod(max(k - iOld, min(jOld, max(iOld - l, jOld - l))), 30);

        l = mod(pow(l, 2), 20) - mod(max(iOld, jOld), k + 1);

        k += 1;

    }

    if (count == 0) {

        printf("Missed due to formula!\n");

    }

    printf("The end! Total hits: %d, Step: %d, EXIT: pos\_i = %f, pos\_j = %f, l = %f\n", count, k, i, j, l);

    return 0;

}