Homework week 12

You should solve the following two problems with **recursive** functions. Other solutions such as general term formula are unacceptable.

Problem 1

The ladder has N steps. You can go upstairs one step a time or two steps a time. Write a program and calculate how many different ways to go for the input N.

Sample input:

3

Sample output:

3

(which denotes *1step+1step+1step* or *1step+2steps* or *2steps+1step*)

Problem 2

Problem Description:

In this problem you will write several recursive functions related to drawing graphics.

Diagonal square

In this problem, given x(double), y(double), L(double), order(int). Draw the graph as follow:

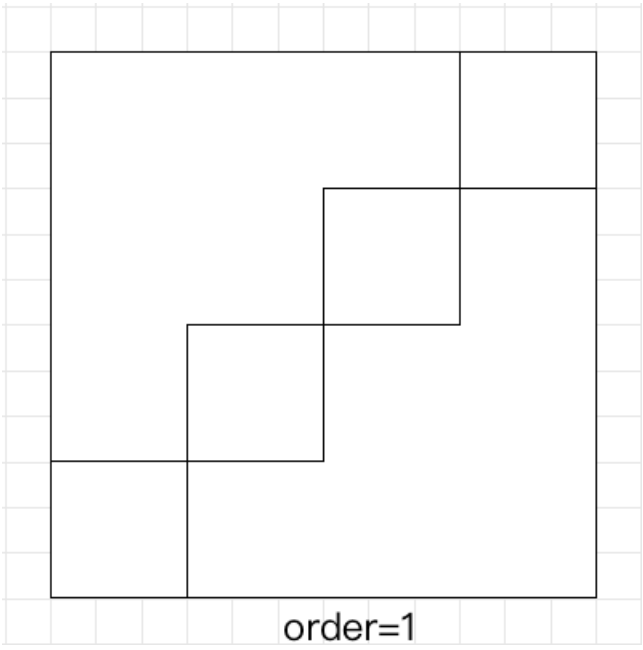
1. If the order > 0, draw a square with side length of L at point(x,y), otherwise, print the graph.
2. Inside the square, draw four square with side length of (1/4)L along the

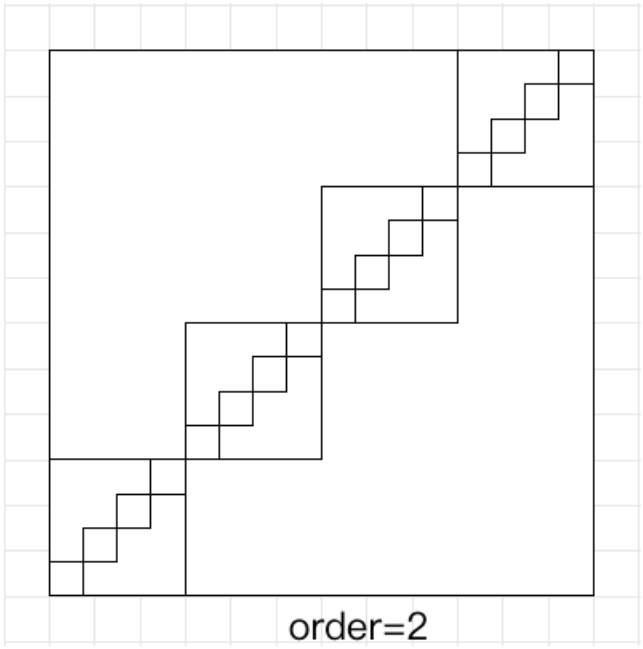
diagonal of the origin square, subtract 1 by order.

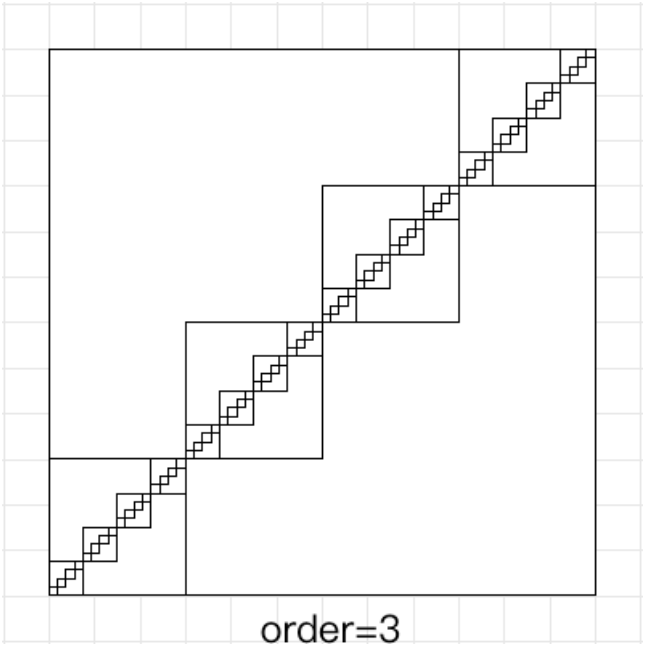
3. Repeat step 1,2 until order==0.

Example:

Input: x=1, y=1, L=12






order=3