Instructions for project

Team 25: Shiwen Xu, Shuqi Ma, Xuan Zhao, Mingyong Cai, Mingqi Han

Required Dependencies:

0.This is a desktop software, you need either windows (10+) or macOS (High Sierra+) to run it. Other platforms with support on java runtime environment might work too. Network connection is not needed.

1.This software needs java runtime environment to open. If you don't have it, you may download it from https://www.java.com/en/download/.

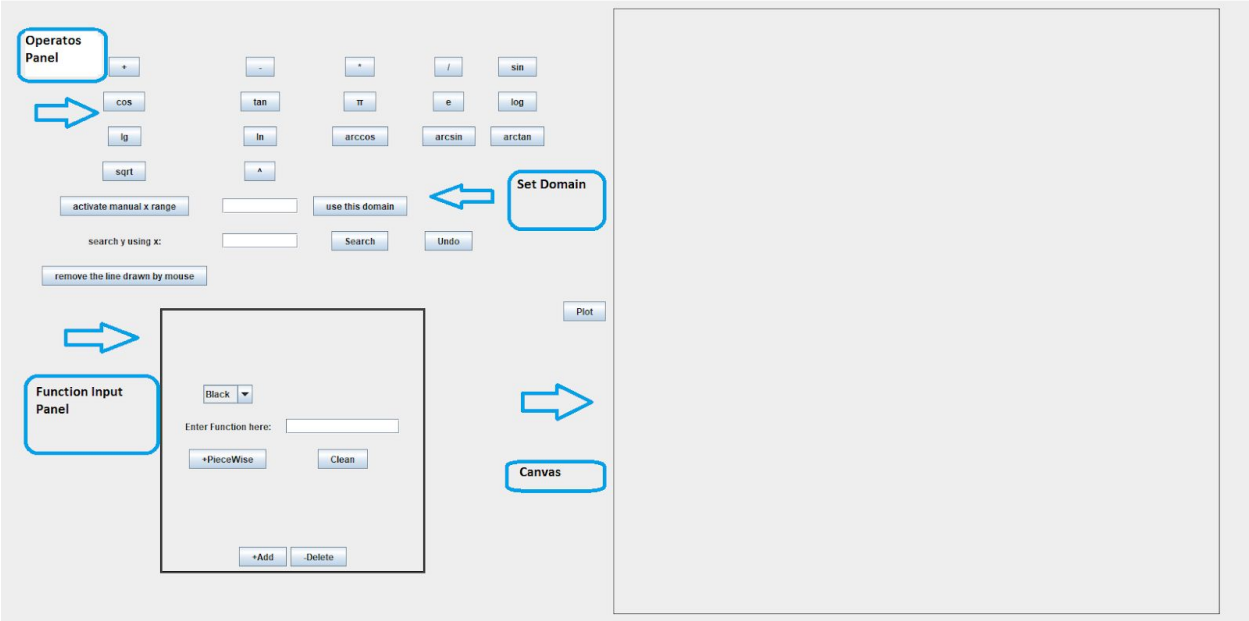
2. After installed the required environment, you can open the executable (graphic_calculator.jar) by double clicking it.

3. To have the full view of the UI, a machine with 1080P+ resolution is required. The window can be dragged to have the view of other parts though.

User Manual:

Overview:

The User Manual contains four sections: Function Input Panel, Operators Panel, Set Domain Canvas.



Purpose:

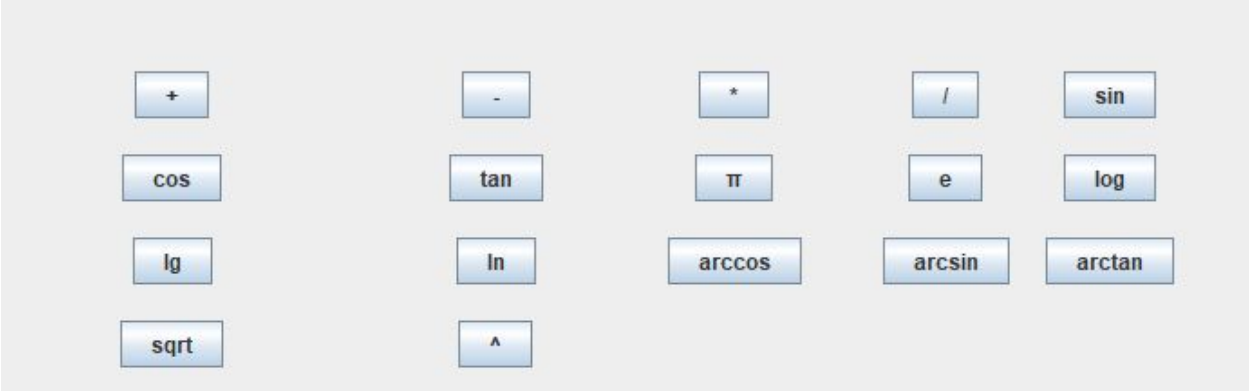
This project is designed for students who majored in Science & Engineering school. We strive to provide accurate, scientific result as well as intuitive graphs to meet the highest quality. To ensure you get the best product, we encourage you to read the following instructions carefully. The application operates on mac and windows environments.

Who Should Use It?

Students in math, statistics, computer engineering, computer science, and other analytical majors.

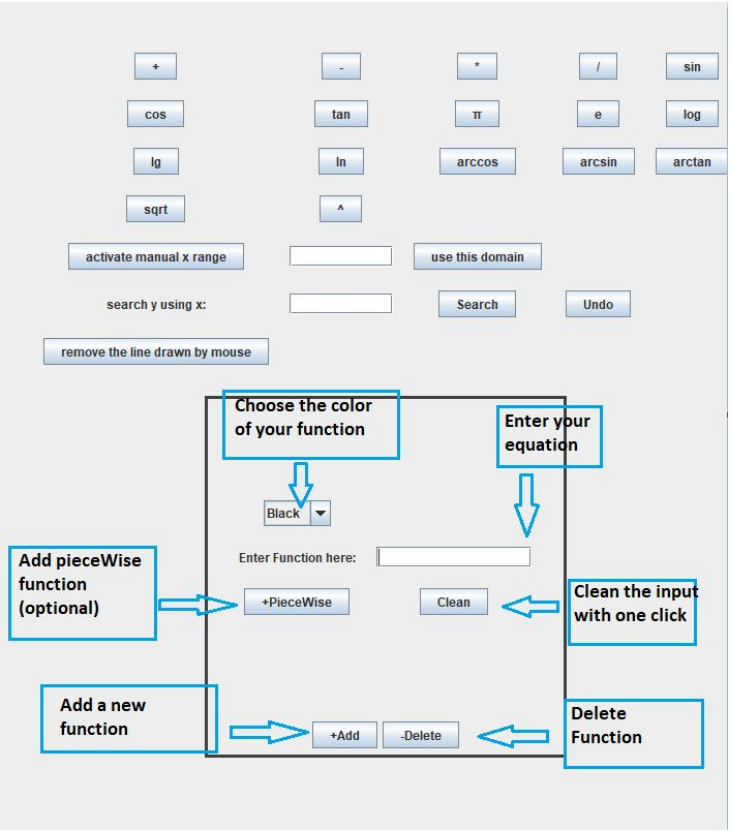
Operators Panel:

As shown below, the operators panel contains all functions that are supported by the application. Users can either type it manually or use the operators button. The only thing users should be careful is parenthesis. For your convenience, we suggest to use operator panel.

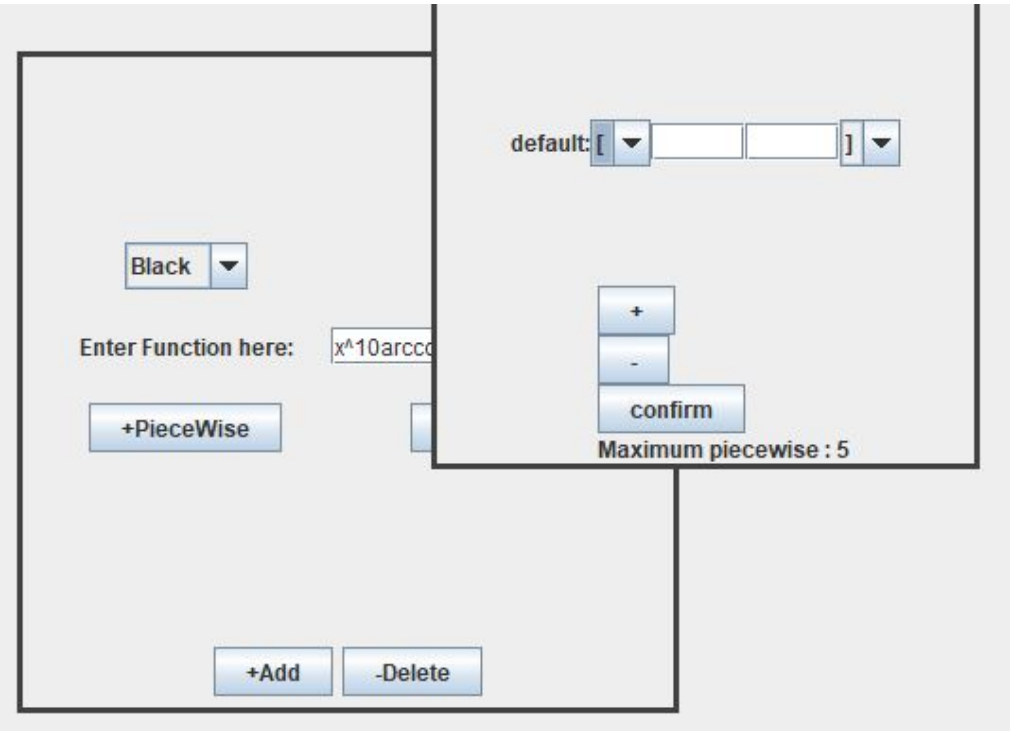


Function Input Panel:

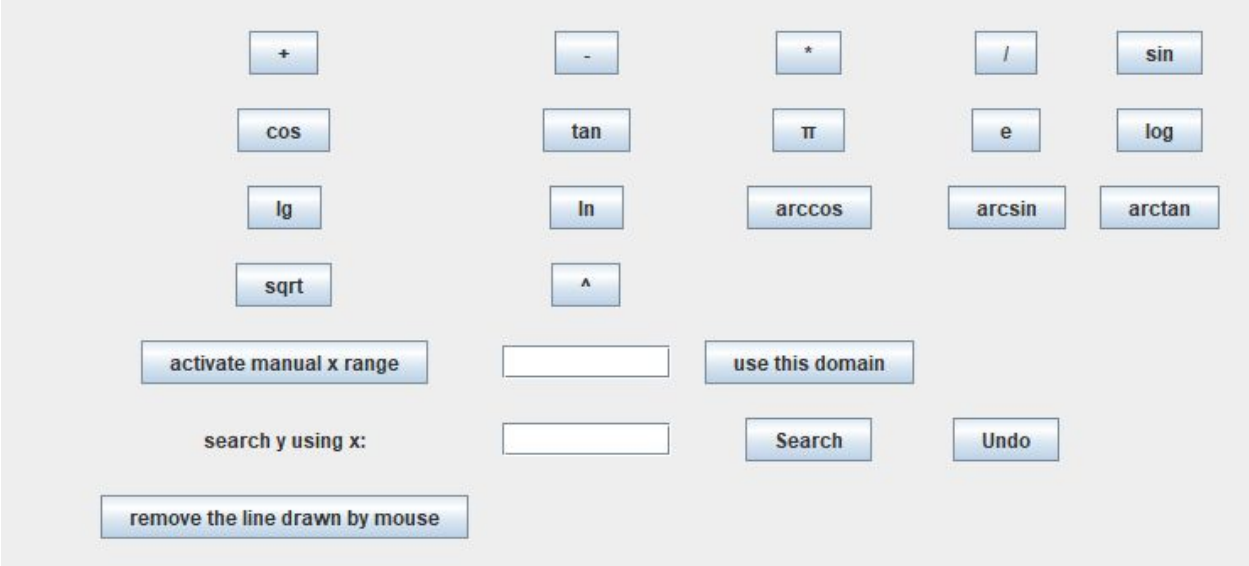
Open the application by double clicking on the .jar executable file. After the application is opened, you will see the interface, which is labeled and described below.



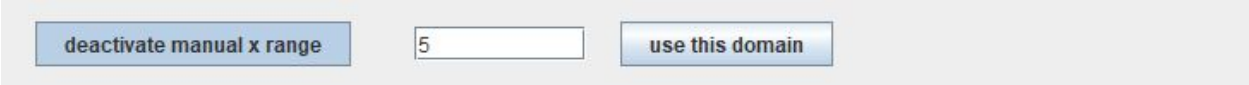
- **Color**: There are four colors. Black is the default one. Blue, red, and yellow are available.
- **Enter Function**:
  (1). This application does not support omitting multiply operator. For example, if the equation is 3x + 5, you have to type 3*x+5.
  (2). This application requires user enter parentheses for some operators. For example, you have to type sin(x) instead of sinx.
  (3). You have to make sure the parentheses is balanced before clicking plot button. Or else there will be an alert popped up.
  (4). You have to make sure there are no other characters in the equation other than x, π, sqrt(). For example, if you accidently typed 3&x+9, there will be an alert popped up.
  (5). You have to be careful with the negative sign. This application does not support negative function so far. For example, you have to type 0-sin(x) instead of -sin(x).
- **Clear:** You can clear current equation by clicking **Clear** button.
- +**Add**: You can add up to 5 functions. Each one supports piecewise.
- **-Delete:** You can delete current function. At least one function will be remained.
- **+Piecewise**: You could set the xrange for the default function or add up to 5 piecewise function,and click confirm to apply the change

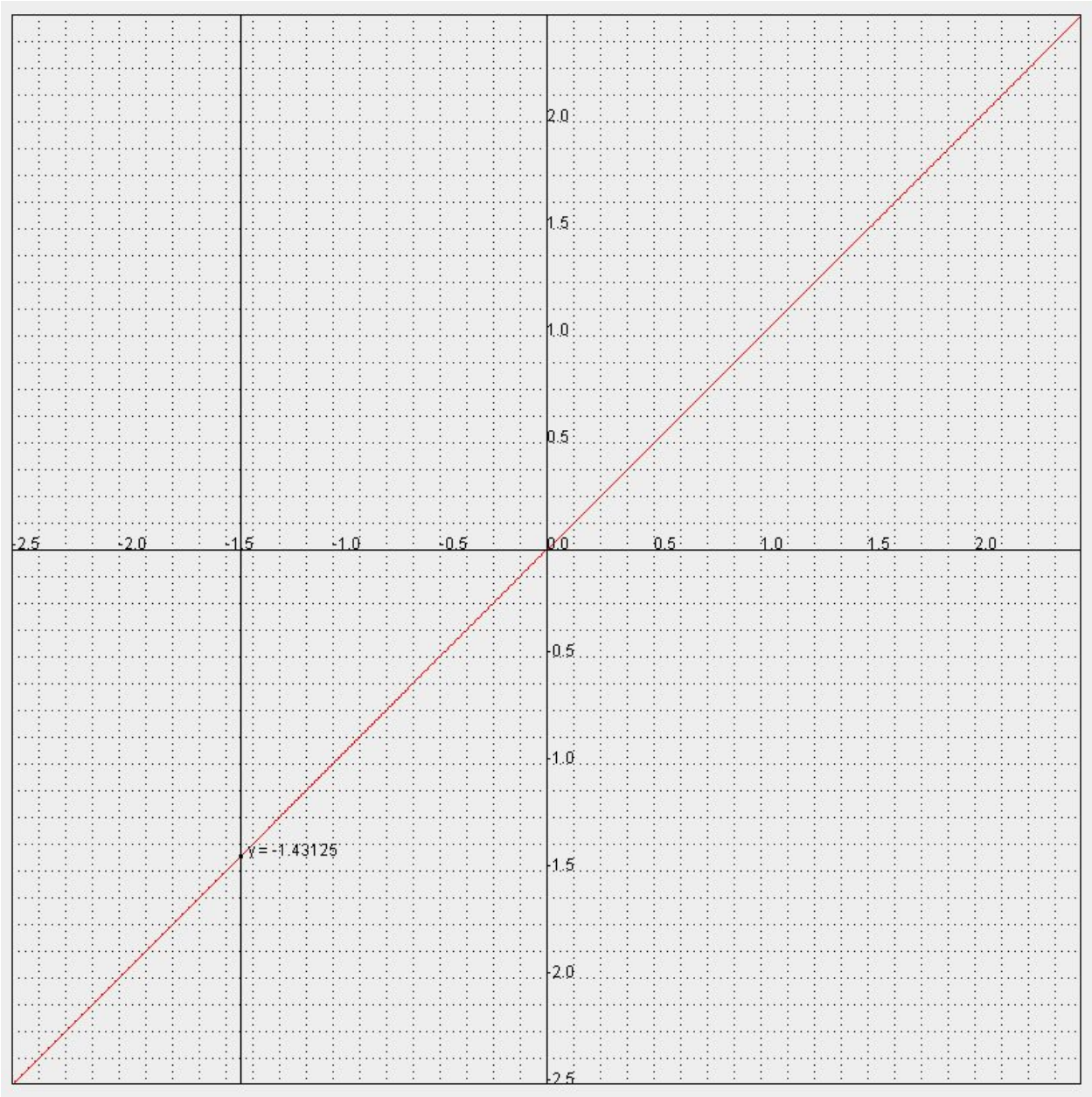


Set Domain:

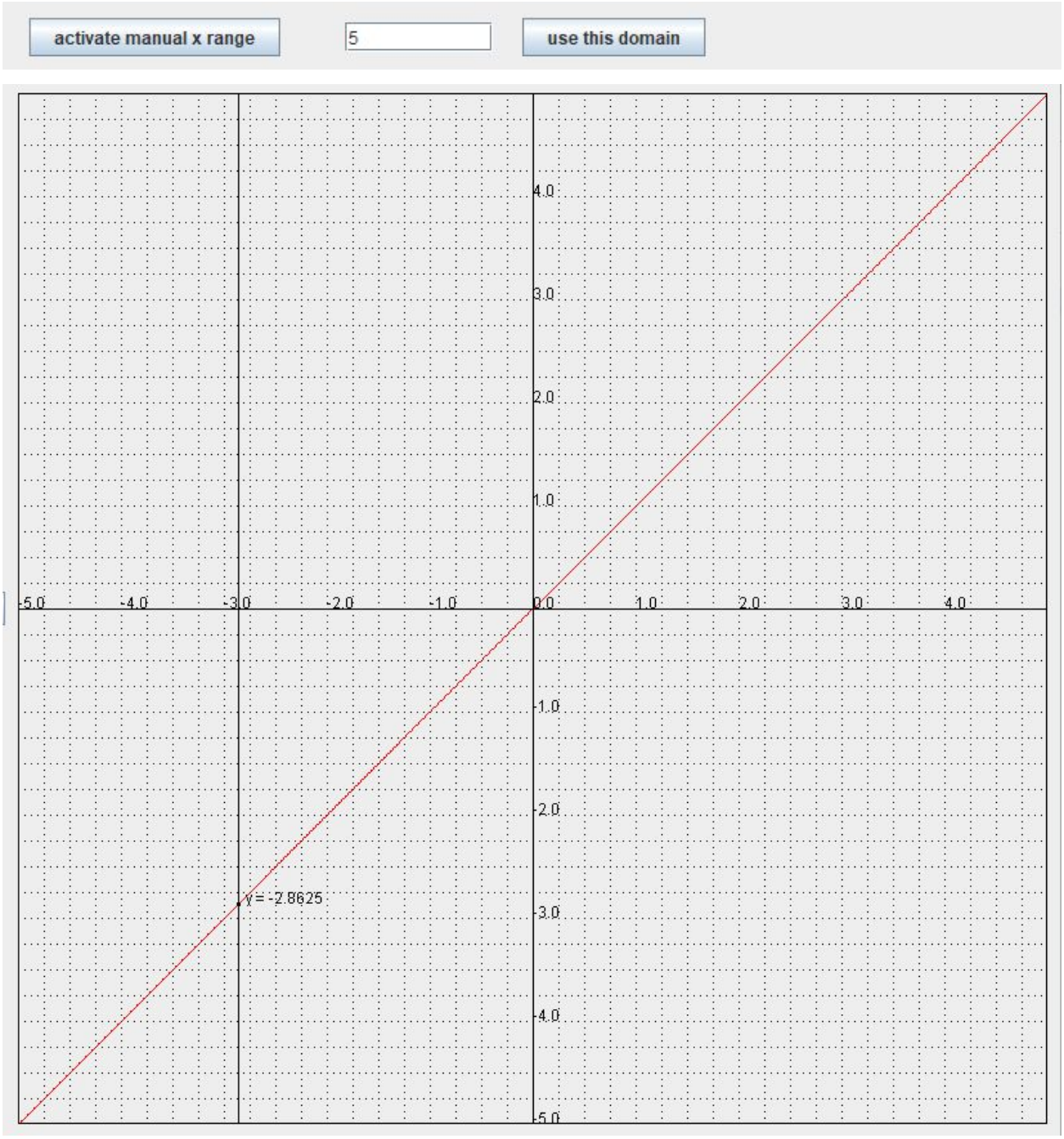


By pressing the “activate manual x range”, you can see the button is shadowed, which indicates you are using your own domain set in the textbox, and by pressing “use this domain”, plot automatically changes its scaling, shown by the labels on the plot.





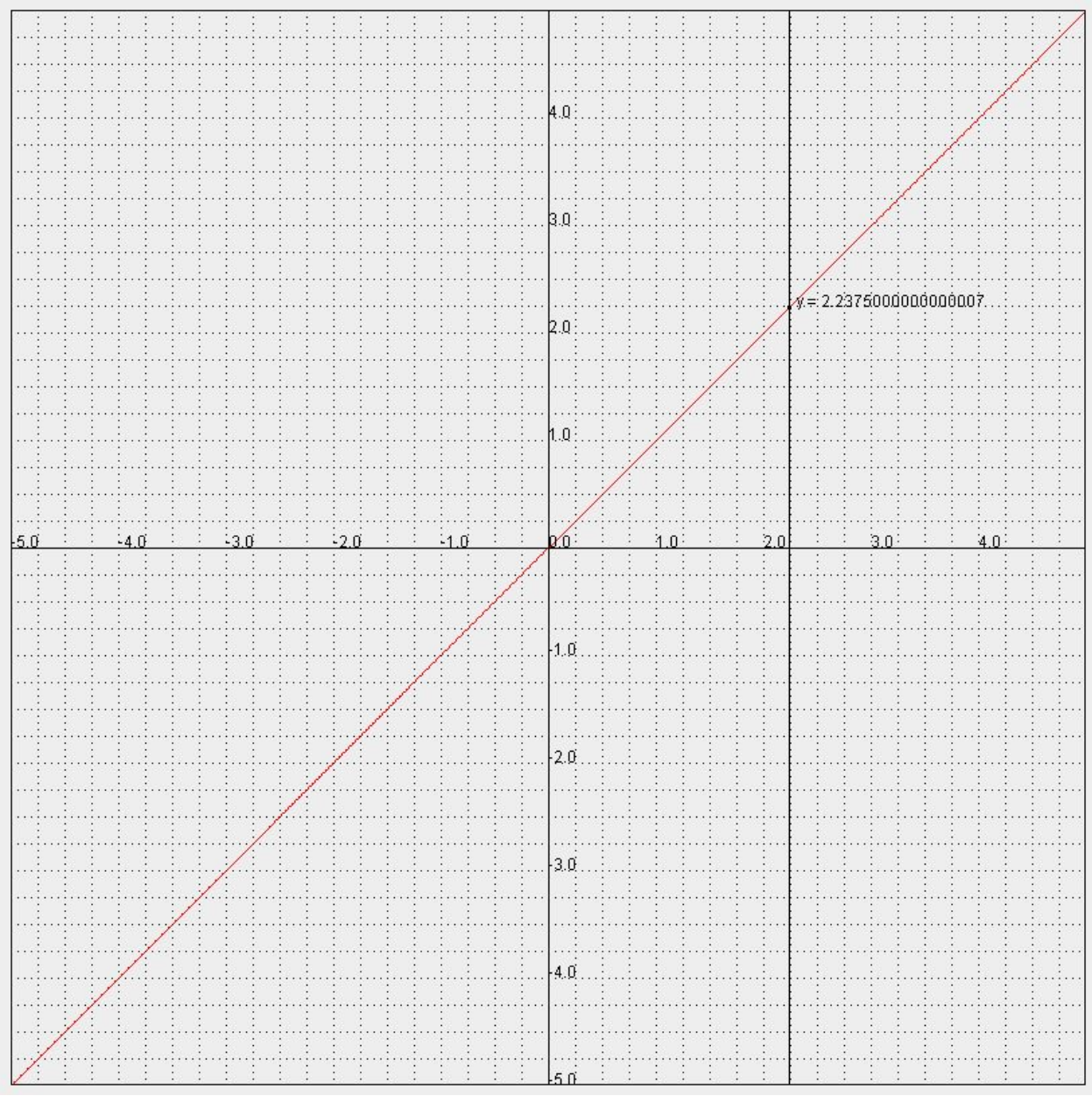
By pressing the “deactivate manual x range” button, and press “plot”, graph goes back to default scale (-5, 5).



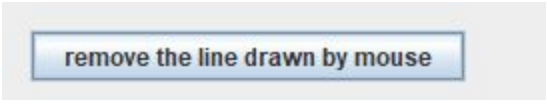
Canvas:

There are total 2 functionality contained here.

1. clicking on the graph, indicating the x value you want and show y value for all functions.



By clicking on the “remove the line drawn by mouse”, the vertical line and y values disappear.



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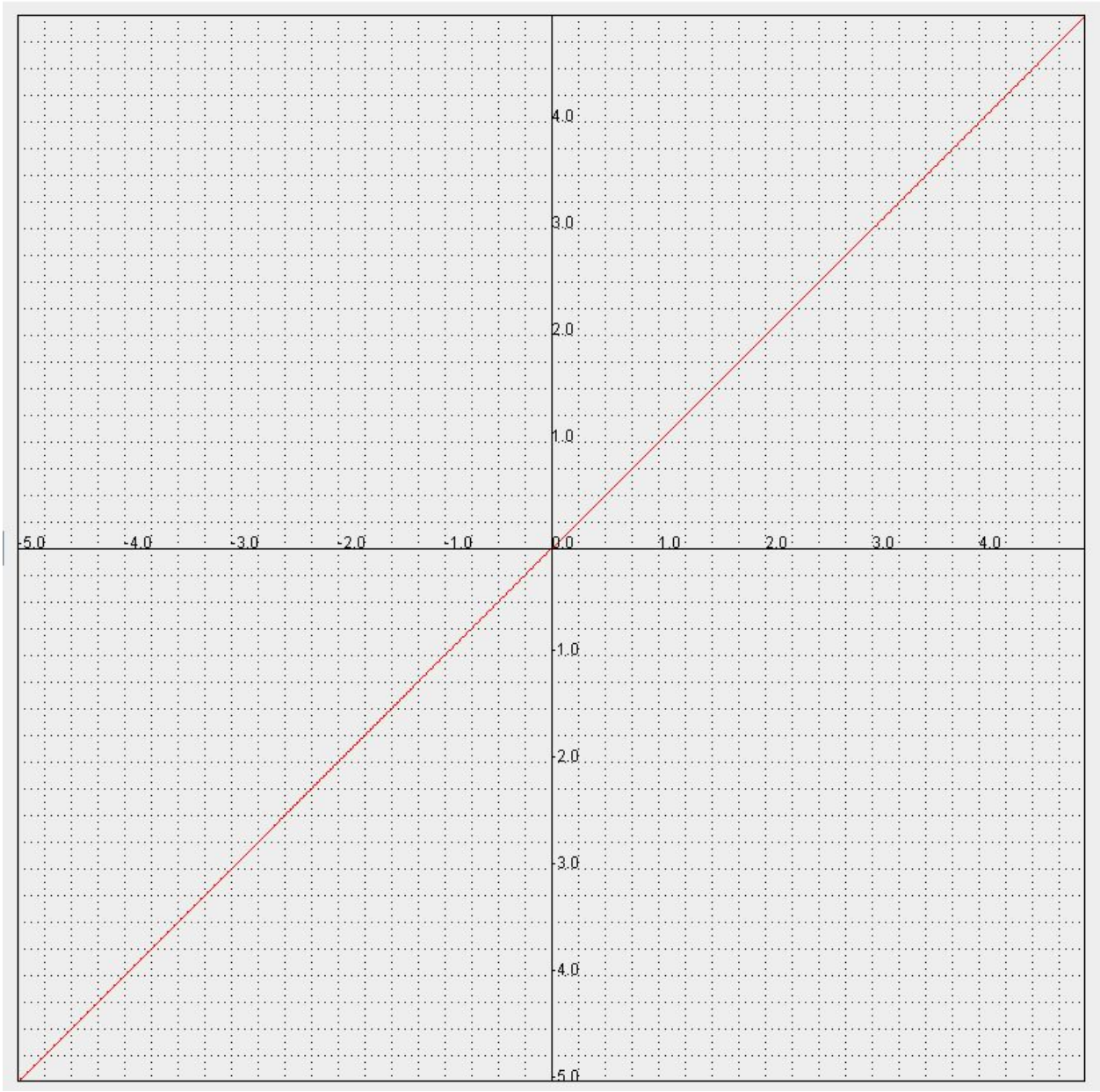
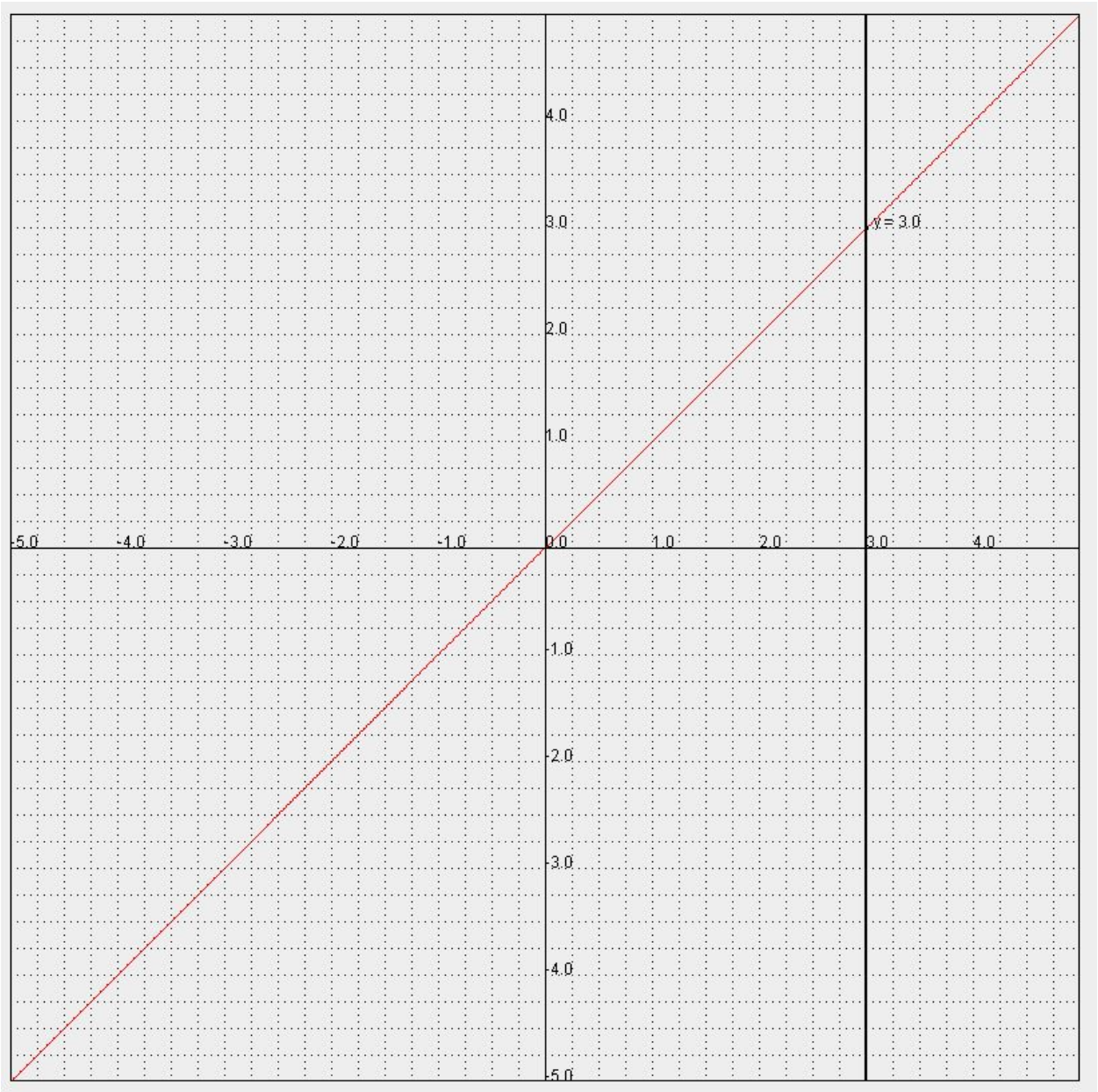
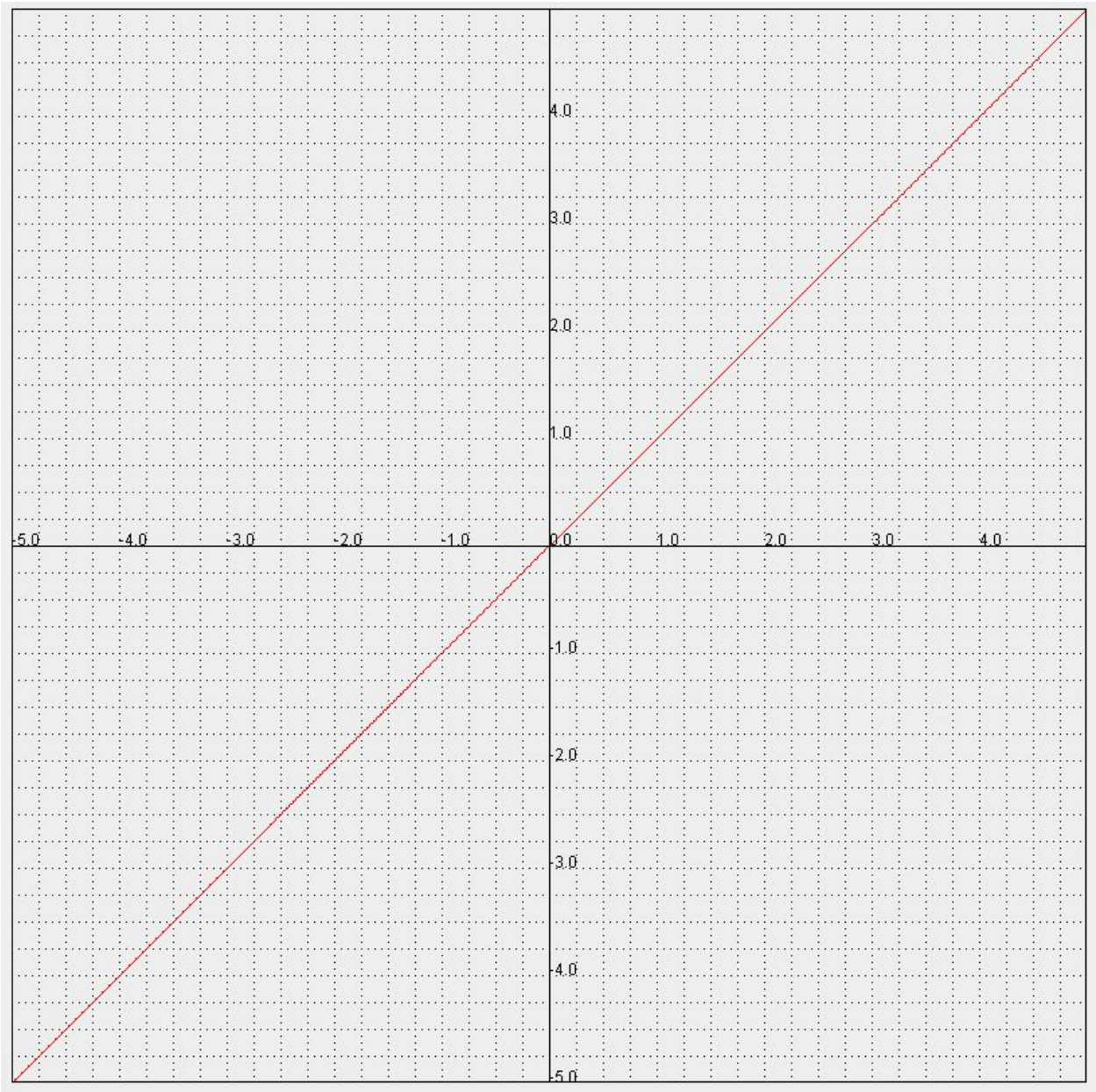


2. Manually input x value and program shows the corresponding y value for all functions.

Plugin the x value you want and press search, corresponding vertical x line and y value for every function on the graph appears.
When a number larger than the scale is used here, an error message will show that you are using a number that's too big.



Pressing “undo” button, the line and label for y disappears.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