

# Graphing Calculator Guide (for the TI-84 family)

## Basics

Turn on: Turn off: The "equals" button:

To delete something: To insert something:

To reset the calculator back to its default settings:

Get to the equation editor (graphing mode):

Get back to the home screen (calculator mode):

Turn up contrast (make it darker): \*\*repeat as necessary

Turn down contrast (make it lighter): \*\*repeat as necessary

Type a negative number: *Input -24* →

Fractions (method A): *Input the fraction 1/3* →

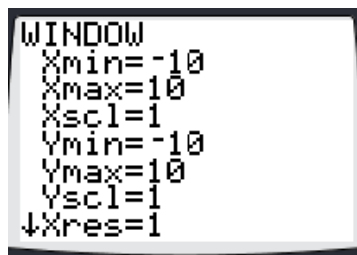
Fractions (method B): *Input the fraction 1/3* →

## Graphing Basics → a walk through style introduction

\*\*note to graph equations, they must be in slope-intercept form (*solved for y*)

1. Graph the equation  $y = 2x + 3$

What is the scaling? Go to the window menu by pressing



- Xmin → the minimum x value on the grid (left most #)
- Xmax → the maximum x value on the grid (right most #)
- Xscl → the x-axis scaling (what each horizontal tic-mark represents)
- Ymin → the minimum y value on the grid (lowest most #)
- Ymax → the maximum y value on the grid (highest most #)
- Yscl → The y-axis scaling (what each vertical tic-mark represents)

2. Now graph the new equation  $y = -3x + 6$  by removing the old one first.

3. Graph the 2nd equation  $y = 3/2 x - 9$  on the same grid.

4. Turn off an equation without deleting the first equation so only the 2nd one graphs.



5. Clear both. Now graph  $y = -2x + 40$



Oh no... what happened! Where is our line?

\*\*Note no error message so it is graphed, we just can't see it. Let's look at the **zoom feature**.

Press the Zoom button.



The two most used zoom's are:

ZStandard → gets you back to the 10 x 10 grid



Five times

\*\*short cut is



ZoomFit → the calculator's really good guess at what you want to see.

**Great starting point for your window settings.**



Nine times

\*\*short cut is



Select ZoomFit for our current graph via the regular way or the short cut way listed above.

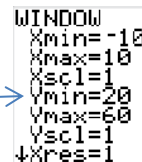
Notice that the x-axis is only a bunch of dots (this means the actual x-axis is BELOW the bottom of the screen). Also note that the y-axis has many thick dark tic-marks.

Push the window button.



Notice the scaling.

Change Ymin to -5 and regraph.



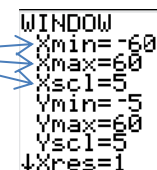
Now the x-axis is visible but the y-scaling is just one big thick line. Push the window button.



Change the Yscl to 5 and regraph.

Looks a lot better now, but remember the x-axis is still going by 1's and only goes to -10 and 10. So what we are looking at is actually *stretched*. Push the window button.

Change Xmin to -60, Xmax to 60, and Xscl to 5.



Push graph, this is what we are more used to seeing. Scaling that *matches*.

6. Now graph  $y = -18/3 x -5$ . You can delete or de-select the current equation, your choice.

Notice it looks like it is coming out of the origin. Let's reset the scaling by selecting ZStandard.



## Graphing Inequalities

Turn on the inequality application “*Inequalz*”:



\*\*Note, the sequence above will ALWAYS get it. But depending on how many apps there are on the calculator you are using you may see it right at top. If you see the app, just select it by **scrolling down** OR by pushing its **shortcut #**.

This should bring you right to the equation editor (graphing mode). When the blinking box is over the “ = ” sign the inequality choices will be listed at the bottom of the screen.



To select an inequality 1<sup>st</sup> press then the corresponding button below the inequality you want. For example:

To select < push:

To select ≥ push:

To select = push:

- Graph the inequality  $y > -2x + 8$ .



- Graph the inequality  $y < 4x - 5$  without deleting the 1st.



- More clearly define their intersection by selecting shades and choosing “1: Ineq Intersection”



- Change the 1st inequality to a < and add the 2<sup>nd</sup> inequality of  $y \geq -3$



Shade their intersections. (see # 3 above)

- Now add the 4th inequality of  $x < 4$ .



Wow that's a mess! Shade their intersections (see #3 above)