Calculator Basics for the TI-83 Plus, TI-84 Plus and TI-86

To effectively use your TI-83 Plus/TI-84 Plus or TI-86 in Calculus there are several things you will need to be familiar with. **Settings** will need to be found and changed. Some settings you use can be found as follows:

SETTING	TI-83 Plus/TI-84 Plus	TI-86
DARKEN/LIGHTEN DISPLAY	**2ND Up/Down Arrow** Up arrow darkens the display, down arrow lightens it. These may be pressed repeatedly. As you press them a number between **1** and **9** will briefly appear in the upper right hand corner of the screen. The higher the number the older your batteries are and more likely they are to need replacing.	**2ND Up/Down Arrow** Up arrow darkens the display, down arrow lightens it. These may be pressed repeatedly. As you press them a number between **1** and **9** will briefly appear in the upper right hand corner of the screen. The higher the number the older your batteries are and more likely they are to need replacing.
MODE OPTIONS	**MODE** The default mode options are those highlighted on the left when you press **MODE**. You use the arrow keys and press **ENTER** to change them. Use **2ND QUIT** to exit.	**MODE** The default mode options are those highlighted on the left when you press **MODE**. You use the arrow keys and press **ENTER** to change them. Use **EXIT** to exit.
DEGREES/ RADIANS	**MODE** Use arrow keys to highlight the one you want press **ENTER**, then **2ND QUIT**. In calculus you usually want the calculator set in **Radians**.	**MODE (2ND MORE)** Use the arrow keys to highlight the one you want, press **ENTER,** then **EXIT**. In calculus you usually want the calculator set in **Radians.**
FORMAT OPTIONS	The format screen is not available. The options are found under **MODE**	**GRAPH MORE FORMAT** The default format options are those highlighted to the left. You use the arrow keys and press **ENTER** to change them. Use **EXIT** to exit.
CONNECTED/DOT DRAW LINE/DRAW DOT	**MODE** Use arrow keys to highlight whether you want your graph drawn as if it were a continuous function (**connected**) or a rational function (**dot**). The resolution on the screen is not always great enough to eliminate the vertical line. You can also change line style.	**GRAPH MORE FORMAT** Use arrow keys to highlight whether you want your graph drawn as if it were a continuous function (**DrawLine**) or a rational function (**DrawDot**). The resolution on the screen is not always great enough to eliminate the vertical line. You can also change line style.
GRAPHING LINE STYLE	The line style is selected from the **Y=** screen by using the & **arrow** to move the cursor in front of the **Y₁=** and highlighting the \ . Change the style by pressing **ENTER**. Options include a dotted line, shading and a solid line.	The line style is selected from **GRAPH Y(x)= MORE STYLE (F3).** Change the style by pressing **F3**. Options include a dotted line, shading and a solid line**.**

GRAPHING WINDOW	**WINDOW** The standard default window is $-10 \leq x \leq 10, \quad -10 \leq y \leq 10$ You can change it to whatever you need. **Xscl** and **Yscl** refer to the scales on the axes. You can change them to fit the problem. An **Xscl** or **Yscl** of **0** eliminates tic marks from the graph. The larger the **xRes** number is the rougher the graph will be. The default is **1**.	**GRAPH WIND (F2)** The standard default window is $-10 \leq x \leq 10, \quad -10 \leq y \leq 10$ You can change it to whatever you need. **Xscl** and **Yscl** refer to the scales on the axes. You can change them to fit the problem. An **Xscl** or **Yscl** of **0** eliminates tic marks from the graph. The larger the **xRes** number is the rougher the graph will be. The default is **1**.
SELECTING TO GRAPH OR NOT TO GRAPH A FUNCTION	Enter function in **Y=.** Use the back arrow to move the cursor onto the =. Press **ENTER** to turn the function on or off. The function will graph only when there is a dark background for the = sign.	Enter function in **y(x)=**. Turn the function on or off by pressing **F5 SELECT**. The function will graph only when there is a dark background for the = sign.
TRACE	**TRACE** Use the arrows to 'trace' the function. If more than one function is on the screen the function being traced will appear in the upper left-hand corner of the screen.	**GRAPH TRACE (F4)** Use the arrows to 'trace' the function. If more than one function is on the screen a small number will appear in the upper right-hand corner of the screen. The number refers to which function is being traced, i.e., **1** means function **y1**.
GRAPHING CALCULATE MENU	**2ND TRACE** The calculate menu allows you to evaluate a function at a point, x-intercepts, function maximums and minimums, points of intersection, numerical derivatives and integrals. The graph of the function is used in the evaluations.	**GRAPH MORE MATH** From this menu numerical derivatives and integrals, function maximums and minimums, points of inflection, points of intersection, x and y intercepts can be found. The graph of the function is used in the evaluations.
CATALOG	**CATALOG (2ND 0)** Gives access to all functions and operations in the calculator. If you can't find a command elsewhere you can find it here. If you type a key which corresponds to a letter (green above the keys) the catalog will jump to commands that start with that letter. Symbols are after the letter **Z**. You can also get there by scrolling up.	**2ND CUSTOM CATLG/VARS CATLG (F1)** Gives access to all functions and operations in the calculator. If you can't find a command elsewhere you can find it here. If you type a key which corresponds to a letter (blue-gray above the keys) the catalog will jump to commands that start with that letter. Symbols are after the letter **Z**. You can also get there by scrolling up.

ZOOM Options	ZOOM	GRAPH ZOOM (F3)
Zoom Box	**1 Zbox** Useful to enlarge part of a graph for inspection. When 1 is pressed a cursor appears at the origin. Move it with the arrow keys to where you want a corner of a box. Press **ENTER** to anchor the one corner. Use the arrow keys to draw a box to the desired size and press **ENTER** to redraw the graph to the size of the specified box.	**BOX (F1)** Useful to enlarge part of a graph for inspection. When F1 is pressed a cursor appears at the origin. Move it with the arrow keys to where you want a corner of a box. Press **ENTER** to anchor the one corner. Use the arrow keys to draw a box to the desired size and press **ENTER** to redraw the graph to the size of the specified box.
Zoom Standard	**6 ZStandard** Returns the calculator to the standard viewing window**.**	**ZSTD (F4)** Returns the calculator to the standard viewing window**.**
Zoom Trig	**7 Ztrig** Sets an approximate viewing window of $-1.96\pi \le x \le 1.96\pi$, $-4 \le y \le 4$, an xScl of $\dfrac{\pi}{2}$ and a yScl of 1.	**MORE ZTRIG (F3)** Sets an approximate viewing window of $-\dfrac{21\pi}{8} \le x \le \dfrac{21\pi}{8}$, $-4 \le y \le 4$, an xScl of $\dfrac{\pi}{2}$ and a yScl of 1.
Zoom Fit	**0 ZoomFit** Will give you a graph which usually includes the features you want to examine. It can be used to find a good graphing window for a function being examined**.**	**MORE ZFIT (F1)** Will give you a graph which usually includes the features you want to examine. It can be used to find a good graphing window for a function being examined.
Zoom Square	**5 Zsquare** Redraws the graph so that the scales on the x- and y-axes are equally spaced for the viewer. This setting will make a circle look like a circle rather than an ellipse.	**MORE ZSQR (F2)** Redraws the graph so that the scales on the x- and y-axes are equally spaced for the viewer. This setting will make a circle look like a circle rather than an ellipse.
Zoom Decimal	**4 Zdecimal** The decimal setting allows the trace function to show x and y values every .1 unit. The default window is $-4.7 \le x \le 4.7$, $-3.1 \le y \le 3.1$	**MORE ZDECM (F4)** The decimal setting allows the trace function to show x and y values every .1 unit. The default window is $-6.3 \le x \le 6.3$, $-3.1 \le y \le 3.1$
Zoom In	**2 Zoom In** Allows you to magnify a portion of a graph centered at the cursor.	**ZIN (F2)** Allows you to magnify a portion of a graph centered at the cursor.
Zoom Out	**3 Zoom Out** Allows you to examine a larger portion of a graph centered at the cursor.	**ZOUT (F3)** Allows you to examine a larger portion of a graph centered at the cursor.

% **Frac**	**MATH** 1 **allows you to convert between decimals and fractions. It will only convert rational numbers where the denominator of the fraction is three digits or less.**	**MATH (2ND X) MISC MORE F1** allows you to convert between decimals and fractions. It will only convert rational numbers where the denominator of the fraction is three digits or less. You may want to store this command in your custom menu.
SIMULTANEOUS GRAPHING	**MODE Simult** Allows you to graph two or more functions simultaneously rather than sequentially.	**GRAPH MORE FORMAT SimulG** Allows you to graph two or more functions simultaneously rather than sequentially.
CALCULATE MENU	**MATH (MATH)** This menu allows you to compute numerical derivatives and integrals as well as find the maximums and minimums of functions. It is not dependent on a graph.	**CALC (2ND ÷)** This menu will allow you to compute numerical derivatives, integrals, determine function maximums, minimums and evaluate the function at a point. It is not dependent upon a graph.
CUSTOM	**Not available**	Commands are placed into the custom menu from the Catalog. Locate the command you want in the catalog. Press **F3**. Press the **F** key where you want to be able to find the command. To use that command all you need to do is press **CUSTOM** and the appropriate F key.
CLEAR	**CLEAR** Clears data from the screen. Pressing it once clears the last entry, twice clears the entire screen.	**CLEAR** Clears data from the screen. Pressing it once clears the last entry, twice clears the entire screen. This key can also be used to clear the menu bar from the bottom of a graph.