Learning the Calculator Mode of the TI-84 Plus

Keys to Know:

- ON (OFF is 2nd ON.)
- BLUE key: (2nd key) gives you what is in Blue above that key.
- ALPHA(Green) key: Lets you enter alpha characters. (but use x,T,θ,n key for *x*)
- Simple operators: Gray keys on right: + , x , - , ÷
- NOTE: Negative key is the white key to the left of ENTER
- If you get an ERR: SYNTAX: choose GOTO to see where your error is!
- Remember to use parentheses to affect order of operations! When you have a fraction, ALPHA Y= gives you a fraction template- USE THIS to avoid problems
- x^2 Key will square the number entered before it
- Raising to **higher power**: use the "caret" key ^ e.g. 2 ^ 3 = 8. To get out of 'exponent' area hit →
- Taking a **square root** is above the x^2 key (e.g.. 2nd x^2 25 Enter gives 5)
- **Cube root**: Math then 4: $\sqrt[3]{(}$ 125 is 5 .**Higher index** than 3: Enter index, then Math then 5: $\sqrt[x]{}$
- **Absolute value**: Math, arrow right to NUM, press Enter. Arrow to right to get out of it.
- π is 2nd ^ (above the ÷ key)
- EE gives you a "*10 to a power". If you get an answer that is longer than 10 digits, it will be given in scientific notation with E replacing "*10 to a power". E.g.12300000000 is 1.23E10.
- Mode lets you change several settings. Arrow to setting, then arrow right to desired choice & hit Enter. Usually you will have all settings left, but to change to fixed decimal change FLOAT to your choice; to use complex numbers change REAL to *a + bi;* choose RADIAN or Degree as needed.

CLEAR key clears whole line. **DEL** key clears the character the blinking cursor is ON
INS (2nd DEL) inserts one character where the cursor is.
To retrieve and edit previous entry(in case you need to change it just a little and don't want to reenter it completely): Arrow up to entry, hit ENTER; it is now in Edit line and you edit it.
To retrieve previous answer: Arrow up to entry, hit ENTER; it is now in Edit line
STO To store a value in *x* or another variable, enter value then STO then x then Enter

Try these:

1. 48 ÷ -2 _____
2. 14^2 _____
3. 74 + 4÷2 _____
4. (74 + 4) ÷2 _____
5. 65 – 131 _____
6. –63.14 + 45.98 _____
7. $(-4)^4$ _____
8. -4^4 _____
9. $\frac{4}{3}\pi r^2$ when r = 1.3 _____
10. $\frac{21}{-4+7}$ _____

(Answers: -24, 196, 76, 39, -66, -17.16, 256, -256, 7.079055446, 7)

For MT124/MT133 and above students:
First store -2 in x. Then enter each expression and hit Enter; check if you got the correct value. If not, check your parentheses!

a)	$2x + 3$	-1
b)	$\frac{4x+1}{5x}$	$\frac{7}{10}$
c)	$\frac{x}{x+2} - 3$	Err : Divide by 0
d)	$\frac{-x+3}{4}$	1 ¼
e)	$\lvert x-1 \rvert$	3
f)	$\lvert x \rvert - 1$	1
g)	$\sqrt{x+6}+1$	3

(These are some difficult expressions you may need to enter into Y =)

Use 2nd Mode (QUIT) to return to calculator screen when in menu or any place.

Graphing on the TI 84 Plus Calculator

If the screen is dim, hit **2nd** (top left) then Up Arrow.
Doing this sequence several times makes it brighter. **2nd** Down arrow dims the screen.

Clear Clears anything entered on that line (in **y=** mode) or the whole screen

Y= Allows you to enter equations (up to 7) which will then be graphed when you hit Graph.

Graph Graphs any and all equations entered in y= screen if the = sign in the equation is darkened.

- If the equal sign in regular, it will not graph.
- To change the equal sign to darkened, put blinking cursor over the = and hit the Enter key.

Reasons your graph does not display:

- Screen has been dimmed (see top of page)
- Your window is improperly set (see below to change by Zoom or Window)
- If your axes will not show, hit 2nd Zoom and be sure **Axes On/Axes Off** is highlighted.
- Stat Plot may be set. To clear Stat Plot:
  - Hit Y= .
  - If *Plot1, Plot2, Plot3* (at top) are highlighted, arrow to them, and hit ENTER to turn each off.

Zoom Choose 6 (Standard) to show standard view of graph (around origin).
Choose 5 (Square) has proper dimensions. Choose 4 (Decimal) for (x,y) values in tenths.

Window will let **you** set the *view* of the function.

- Xmin is leftmost value on x axis. X max is rightmost value on x axis that will appear on screen.
- Ymin is lowest value on y axis. Ymax is highest value on y axis.
- Yscl and Xscl is scale-how often tick marks appear on the x and y axes.10 means once every 10.
- Do not change Res value.

Trace Lets you move your cursor along the line (or other curve). The (x,y) coordinate of the current point displays at the bottom.

To move to a specific point on the graph (and show (x,y) coordinate)

- hit Trace, enter the x value(x coordinate)
- hit the Enter key
- the cursor will move to that point and show the y coordinate.

Hints on entering equations (functions):

- the x,T,θ,n key (3rd row, 2nd column from top on calculator) when entering independent variable into y= .
- The *Subtraction symbol* is in the right column; The *negative sign* is to the left of the Enter key
- If you need to enter a fraction (rational expression) with more than one term in the numerator or denominator, you **must** use parentheses to group numerator or denominator.

To return to Calculator Mode, hit 2nd /Mode