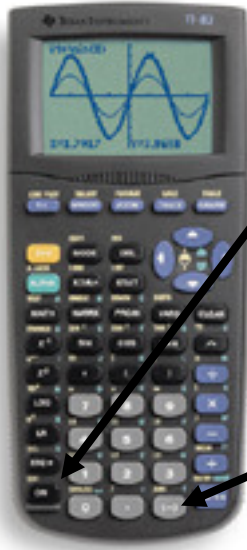


## Getting to Know your TI-83 – Basic Calculations



Use this key to turn the calculator on.

To turn the calculator off, hit the yellow **2nd** key (top left corner), then this key.

Use the **(-)** key to make a number negative. Using the blue minus key for a negative will result in a syntax error (see error messages, below).

The home screen is the blank screen you see when you turn on the calculator. To get back to the home screen from any other screen, hit “quit” by hitting **2nd** and then **MODE** (the key next to **2nd**).

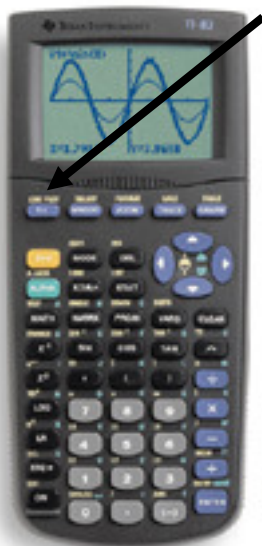
In the home screen, try calculating the following:  $\frac{-3-5}{2}$ .

You should get  $-4$ .

**Hint:** use the negative key in front of the 3, and the subtraction key before the 5. Place parenthesis around the numerator, so that *all* of the numerator will be divided by 2.

Common errors	Causes	Solutions
ERR:SYNTAX	Unmatched parentheses Using a negative sign instead of a minus sign Misplaced commas General typos	When ERR:SYNTAX is displayed <b>choose 2:Goto</b> This will place you at the error so that you can fix it.
ERR:NONREAL ANS	The calculator is in REAL MODE, a calculation that produces a non real answer will produce this result Example: $\sqrt{-4}$	When ERR:NONREAL ANS is displayed <b>choose 2:Goto</b> This will place you at the error so that you can fix it.

## Getting to Know your TI-83 – Graphs and Tables



To graph an equation, hit the  $\boxed{Y=}$  key, then enter the equation. Hit the  $\boxed{\text{ZOOM}}$  key, followed by the number 6, to create a standard-sized graphing area and to see the graph of the equation.

Try graphing the line  $y = 2x + 3$ :

Hit  $\boxed{Y=}$ . Use  $\boxed{\text{CLEAR}}$  to clear out anything that is already there. Arrow down to each line as needed and hit  $\boxed{\text{CLEAR}}$  again. Next to  $Y_1$ , type  $2x + 3$ . Use the key  $\boxed{X,T,\theta,n}$  to get the variable  $x$ . Use  $\boxed{\text{ZOOM}}$  6 to set the window.

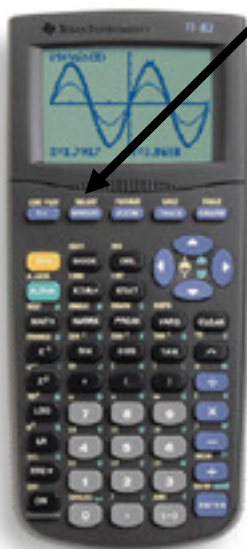
To see a **table of values** for  $y = 2x + 3$ , first set the table increments and starting point using  $\boxed{2\text{nd}}$   $\boxed{\text{WINDOW}}$ . Under TblStart, type -5 so that the table starts at -5. Make sure  $\Delta\text{Tbl}=1$ , meaning that the table will go up increments of 1. Then hit  $\boxed{2\text{nd}}$   $\boxed{\text{GRAPH}}$  to see the table. To see more how TBLSET works, try changing TblStart to 10, and  $\Delta\text{Tbl}$  to .5. Then hit  $\boxed{2\text{nd}}$ ,  $\boxed{\text{GRAPH}}$  to see what happens to the table.

Common errors	Causes	Solutions
ERR: INVALID DIM	You are graphing an equation when STAT PLOT is on.	Hit $\boxed{2\text{nd}}$ $\boxed{Y=}$ to get into STAT PLOT. Cursor to each stat plot that you want off: hit $\boxed{\text{ENTER}}$ , cursor to Off and hit $\boxed{\text{ENTER}}$ again. Nothing will happen, but the stat plots have been turned off! Hit $\boxed{2\text{nd}}$ $\boxed{Y=}$ to get back to the stat plot menu to see, or hit $\boxed{\text{GRAPH}}$ to go back to graphing. <b>To turn all STAT PLOTs off,</b> Hit $\boxed{2\text{nd}}$ $\boxed{Y=}$ to get into STAT PLOT, then choose 4:PlotsOff.

**When all else fails you can reset your calculator:**

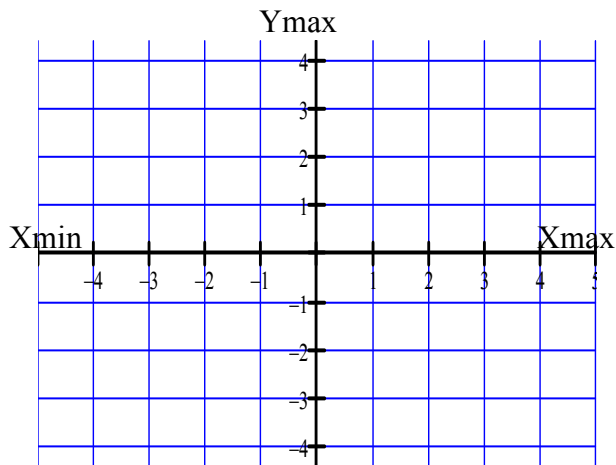
1. Press  $\boxed{2\text{nd}}$   $\boxed{+}$  (MEM).
2. Select 5: Reset...
3. Select 1 All Memory...
4. Select 2: Reset

## Getting to Know your TI-83 – Changing the Window, Finding an Intersection



If **ZOOM** 6 does not give a good view of your graph, you can use the **WINDOW** key to change the graphing area. You will see: Xmin= , Xmax= , Xscl= , Ymin= , Ymax= , Yscl=

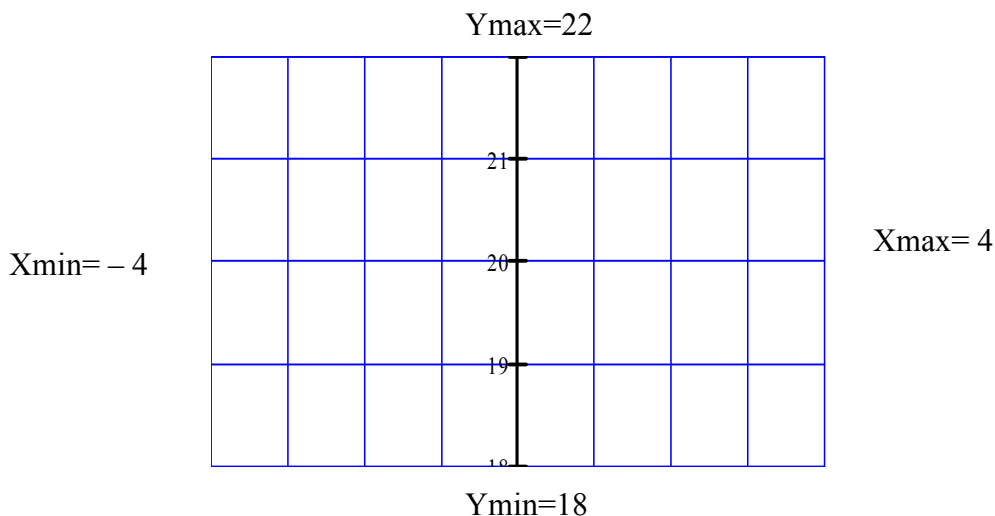
These correspond to the following places on the graph:



In this window, Xscl=1 and Yscl=1, meaning that each tic mark is one unit.

Try graphing the line  $y = 2x + 20$  using the **Y=** key to enter the equation, then **ZOOM** 6. What do you see?

Now try resetting the window. To decide on an Xmin, Xmax, Ymin and Ymax, use **2nd** **WINDOW** to see the table of values. Notice that for  $x$  values from -4 to 4, you can see  $y$  values from 18 to 22. Try letting the Xmin=-4, Xmax=4, Ymin=18, Ymax=22. Then hit **GRAPH**. Here is a window with those values:



## To the Instructor: Common TI-83 Error Messages and Solutions

Common errors	Causes	Solutions
ERR: WINDOW RANGE	One of the maximum values in the window are less than the minimum values	Change the values in the window so that the maximum values are greater than the minimum values
ERR: NO SIGN CHNG	The point of intersection is not displayed on the graph.	Change your window to display the point of intersection
ERR: BOUND	When looking for the zeros the cursor stayed to either the left or the right for both selections	Choose quit and re-graph. When asked left bound ensure the cursor is to the left of the x intercept when asked for right bound ensure that the cursor is to the right of the x intercept
ERR: INVALID DIM	<p>You are graphing an equation when STAT PLOT is on.</p> <p>Data is placed in different lists than the calculator is being asked to graph.                      Example                      Data is placed in L<sub>1</sub> and L<sub>2</sub>                      However L<sub>3</sub> and L<sub>4</sub> have been selected on Plot 1</p>	<p>Hit <b>[2nd] [Y=]</b> to get into STAT PLOT. Cursor to each stat plot that you want off: hit <b>[ENTER]</b>, cursor to Off and hit <b>[ENTER]</b> again. Nothing will happen, but the stat plots have been turned off! Hit <b>[2nd] [Y=]</b> to get back to the stat plot menu to see, or hit <b>[GRAPH]</b> to go back to graphing.</p> <p><b>To turn all STAT PLOTs off</b>, Hit <b>[2nd] [Y=]</b> to get into STAT PLOT, then choose 4:PlotsOff.</p> <p>Make the lists chosen under plot agree with those selected for your data.</p>
ERR: DIM MISMATCH	<p>There is an input without an output.                      There is an output without an input</p>	Check lists to ensure that each output has an input and vice versa