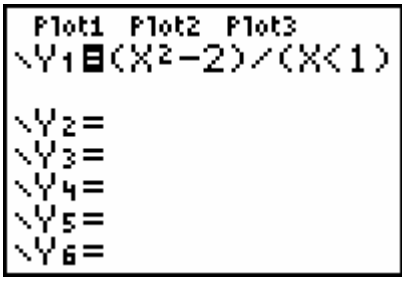
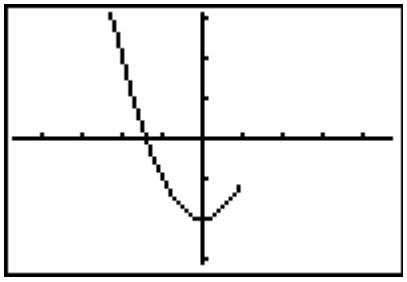
Graphing Piecewise Defined Functions on the TI83Plus TI84

A function such as the one below is called a piecewise function and can be entered into theTI-83/84. However, it does require careful entry.

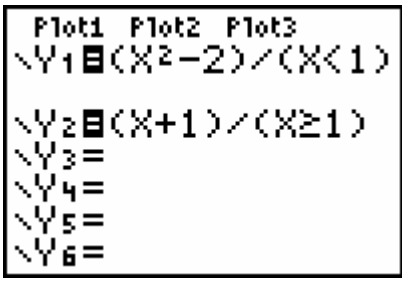
$$f(x)=\begin{cases} x^2-2, \ if \ x<1 \\ x+1, \ if \ \ x\geq 1 \end{cases}$$



1. Open the y-editor, **[Y=]** and enter the first function as shown on the right.
   The < , > signs are in the **[TEST]** menu. The key combination is**[2nd] [MATH]**
   The parentheses are very important.

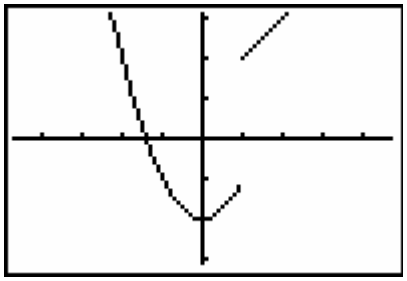


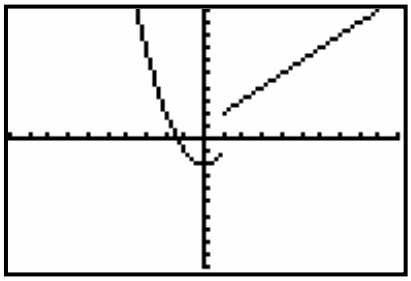
2. Graph. Press **[ZOOM][6]** for a Standard Window. Notice that the function only graphs where x < 1.
   This example was done with a **[ZOOM][6], the** Zdecimal window.



3. On Y2 enter the rest of the function as shown.

4. Graph. The function is shown with a both the Zoom Decimal window and also a Standard window to the right.





What about more complicated functions?

$$f(x)=\begin{cases} x^2-2, \ if \ x<1 \\ x+1, \ if \ \ 1\leq x\leq 4 \\ -x, \ \ if \ \ x>4 \end{cases}$$