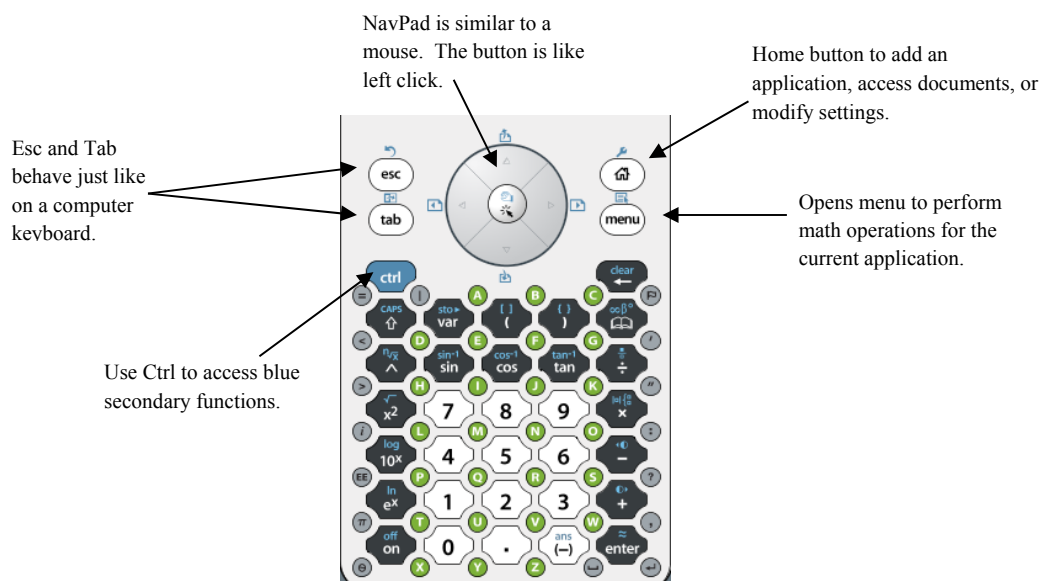


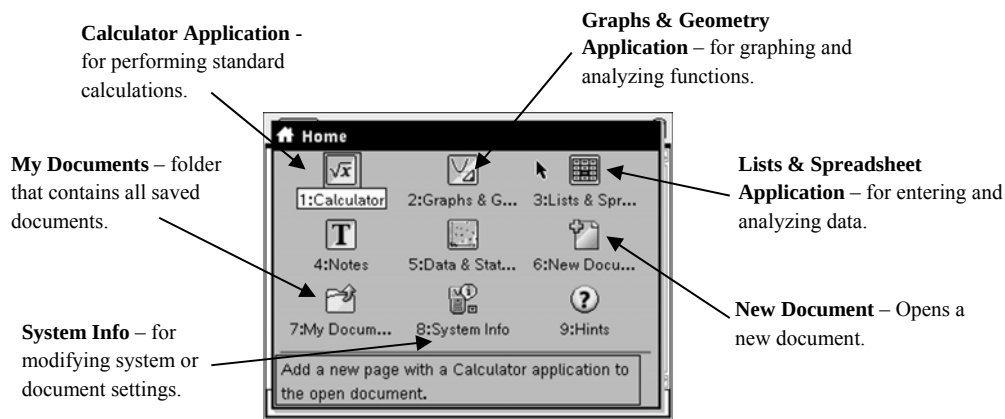
This primer will help you get a feel for the TI-Nspire calculator, which is quite a bit more powerful than the TI-84 you're used to using. You might think of the Nspire as more like a mini computer where you can save and review work within a file system and take advantage of standard PC shortcuts (e.g. CTRL+S, CTRL+V). The more you remind yourself of this similarity to computers, the faster you will become comfortable with this calculator. But before we get in too deep, let's start with some basics.

I. Keypad Basics



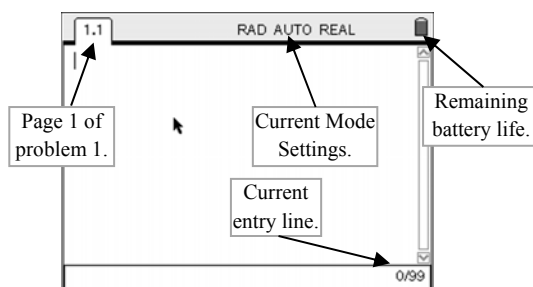
II. Home Screen Basics

The home screen is like the Start menu on a PC, allowing you to select from all possible applications. Press to view the home screen. To select an option either type the corresponding number or use the NavPad to highlight the option and then press .



III. Using the Calculator Page

From the Home screen, open a new calculator page by pressing  on 1:Calculator (you can also press the click button  or just ). Your screen will look like this:



1. Here we can perform standard calculations. Try the following:

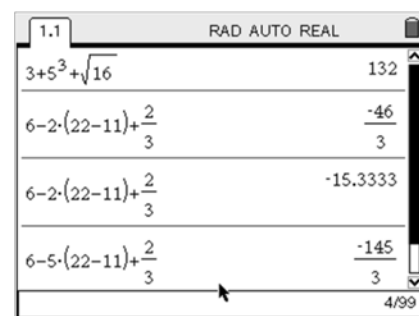
a. $3+5^3+\sqrt{16}$ (use right arrow to exit the exponent and for square root.)

b. $6 - 2(22 - 11) + \frac{2}{3}$

Notice the answer is given in exact form. To obtain a decimal approximation press $\boxed{\text{ctrl}}\boxed{\approx}$. Try it.

c. $6 - 5(22 - 11) + \frac{2}{3}$

Before you type the entire expression, arrow up to access the previous entry, hit enter and then modify.



2. The Nspire can also work with expressions containing variables. Try the following:

a. $4x - 7x + 6x$ (for x use the small green key next to $\boxed{0}$.)

b. $6b - 2b - 9$

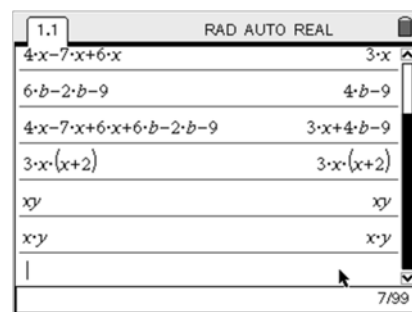
- c. Add the expressions given in parts *a* and *b* above. (Use the up arrow to access previous entry and press enter to copy it.)

d. $3x(x+2)$

Note: you must type the multiplication symbol $\otimes$ between x and the parentheses. Otherwise, you will get an error.

- e. Type **(x)(y)** and press . Then type **(x)****(y)** and press .

Notice the difference between the two answers. xy is recognized by Nspire as a variable, while $x \cdot y$ means x multiplied by y .



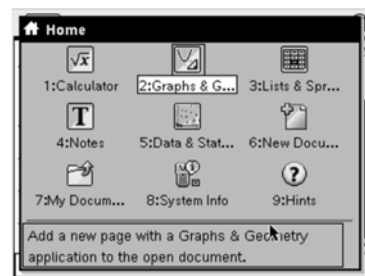
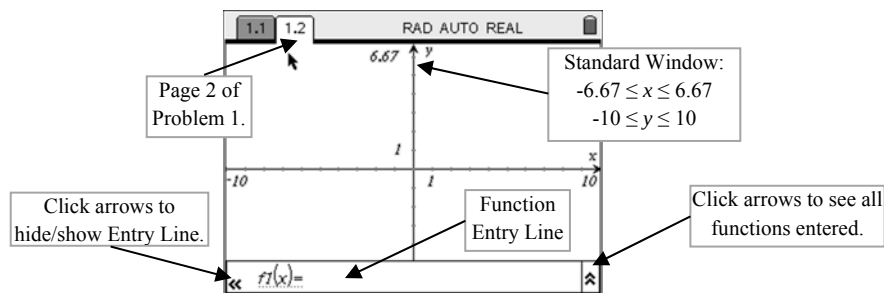
Clear the page by pressing .

Suppose we wanted to show our work again. Press   to undo the last operation. You should see all of your prior work.

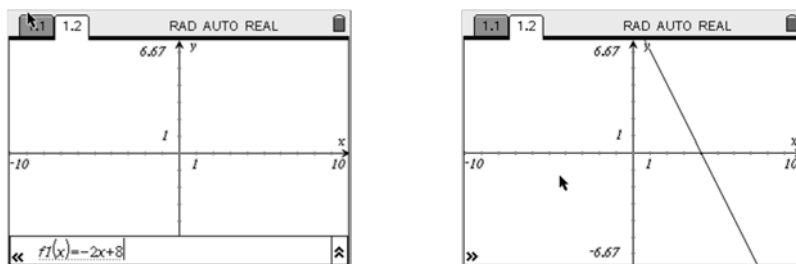
**** Helpful Hint:** Use to UNDO the last operation on any page.

IV. Graphing a Function

Add a new Graphs & Geometry page by pressing Home  and then selecting 2:Graphs & Geometry by pressing the number 2 (or arrow right and press ).



1. **Graph the function:** You should see $f1(x)=$ in the Entry Line. $f1(x)$ is function notation for y . Graphing $f1(x) = -2x + 8$ is the same as graphing $y = -2x + 8$, so enter the expression $-2x + 8$ and press  to graph the line.



After graphing the line, the Entry Line at the bottom is automatically hidden. To show the Entry Line again, press  or use the pointer to click on the double arrows at the bottom left. To hide it again, press . the Entry Line, press  . Alternatively, you can press   to hide/show the Entry Line.

2. **Change the Window.** There are two ways to change the window settings.

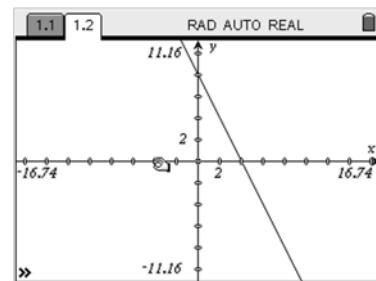
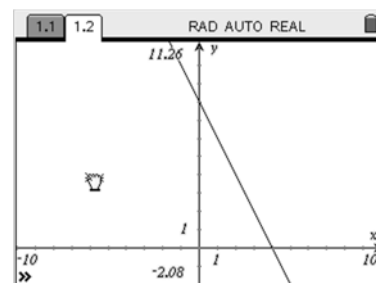
Method 1 – USE THE HAND:

- a. To grab the entire graph: Move the cursor to an open space and press  . You will see the crunched paper symbol with a hand . The graph can now be moved in any direction. Use the NavPad keys to move the graph so the y -intercept is visible.

** Press   to undo the changes you just made and reset to the original window before trying part b.

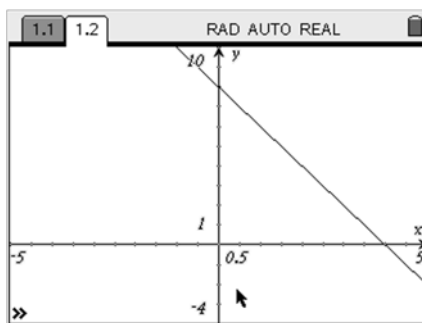
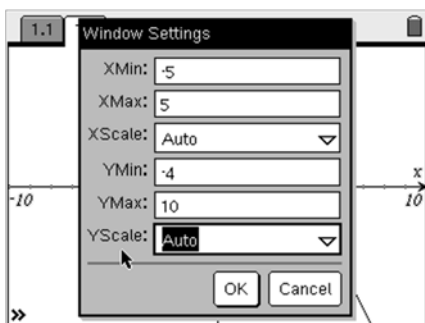
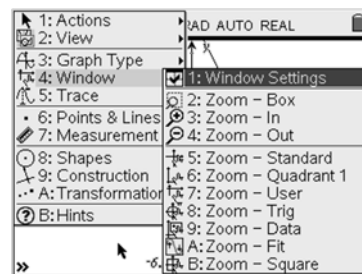
- b. To grab the tick marks: Move the cursor to a tick mark on the x -axis (away from the line you graphed). An open hand  will appear. Press   to grab the tick mark (look for the closed hand ), then use the NavPad keys to modify the **scale of both axes**.

** Press   to undo the changes you just made and reset to the original window before trying method 2.



Method 2 – CHANGE WINDOW SETTINGS: Press menu to view the menu options for this page. Choose 4:Window by pressing 4 (or use the NavPad to scroll down). The options listed are similar to the window options on a TI-83/84. Select 1:Window Settings by pressing enter .

Modify the settings as in the image below at left. As on a computer, use tab to move down and up to move up in the Window Settings box. Press enter or click on OK to save these settings. Your graph should match the image below at right.



3. Trace a Function.

Start tracing by pressing menu choose 5:Trace then 1:Graph Trace. An X appears on the line and the coordinates of that point are displayed at the bottom right (Figure 3.1). Use the NavPad to move to trace along the line. Find the x-intercept by moving close to the x-axis (Figure 3.3). The word 'zero' appears at the x-intercept. You can also move the trace by inputting a desired x-value. Press 0 enter (Figure 3.4). What's the name of the point you found?

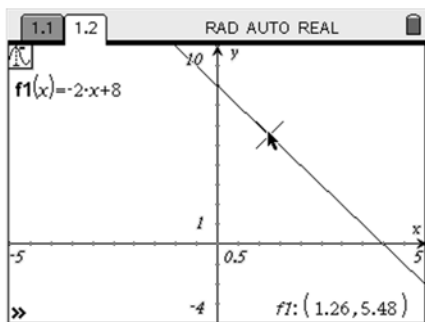


Figure 3.1

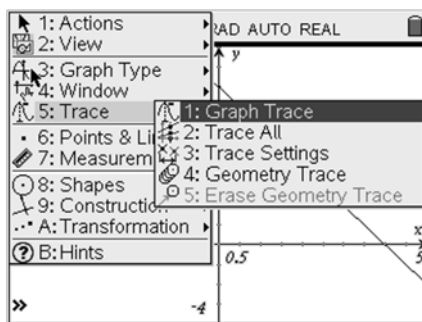


Figure 3.2

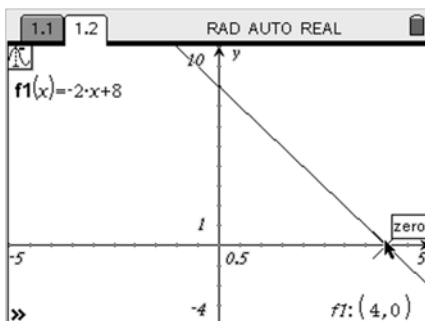


Figure 3.3

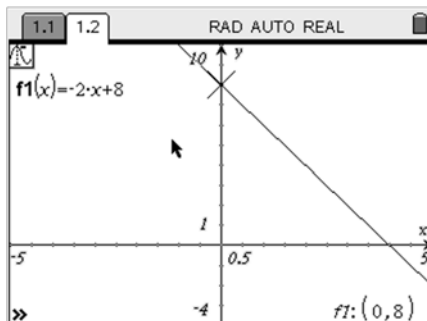
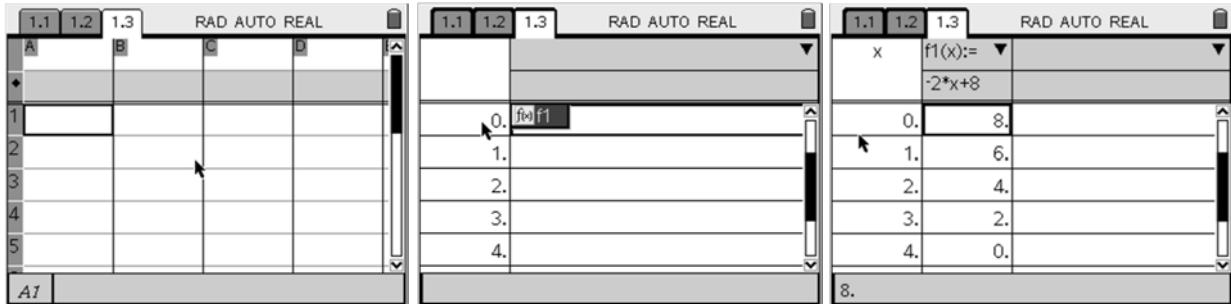
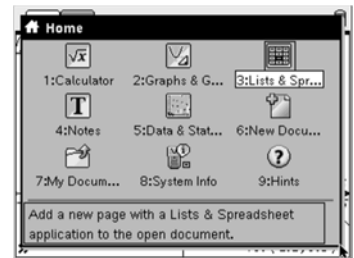


Figure 3.4

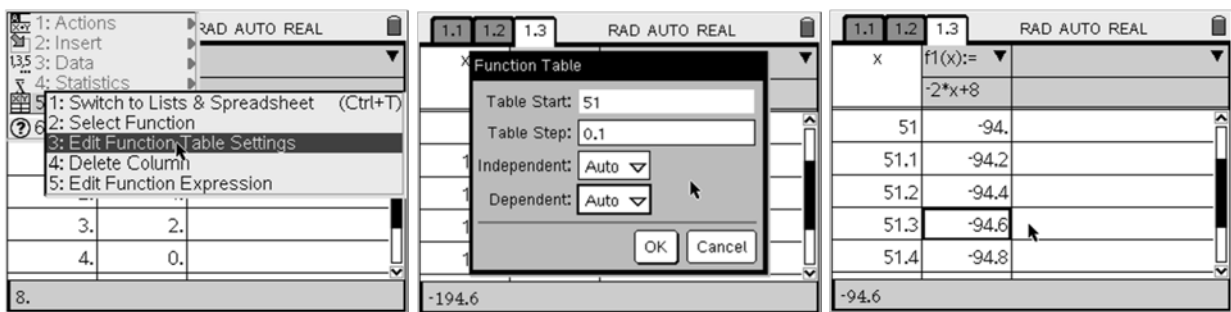
Notice the trace icon in the top left corner of the screen. This tells us that the trace tool is active. To exit the trace tool and stop tracing press esc . This works for all tools we'll be using in the Graphs window.

4. View Table of Values.

To view a table of values for our line, let's start by adding a new Lists & Spreadsheet page. Press Home  and select 3:Lists&Spreadsheet by pressing the number 3 (or arrow right and press ). Press   to insert a function table. Then press  to select f1. Use the NavPad to scroll up/down the table. What is the y-value when $x = -8$?



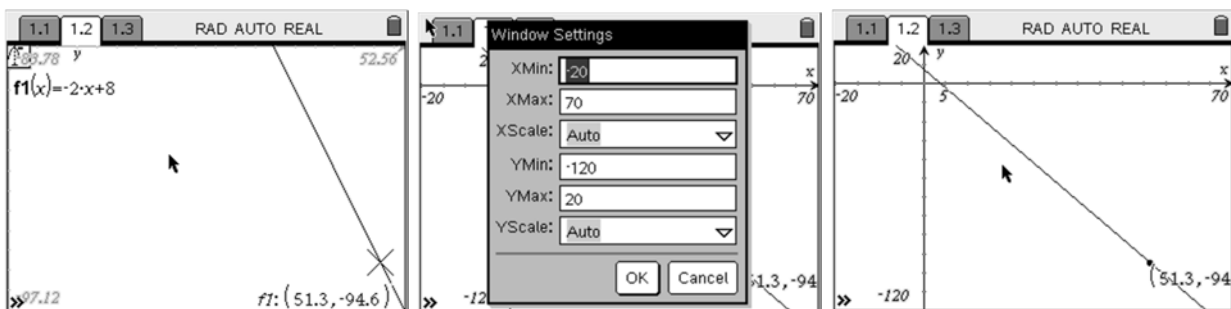
Let's modify the function table settings. To do this, press   . Suppose we want to find the y-value when $x = 51.3$? Change the values to match the image below. Again use  to move the cursor down and   if you need to move up. Press  or click OK to save these settings.



Suppose we want to see this point (51.3, -94.6) back on the graph we created?

Notice we're currently on page 1.3. To **move between pages**, press  and then left or right on the NavPad. So, to move back to page 1.2, press  and then the left arrow  on the NavPad.

The Trace tool should still be active (look for icon at top left). If Trace is not active, press    to activate it. Now, type 51.3 and press  to locate the point from our table above. We want to plot a point at this location. Press  again to plot the point. Finally, change the window settings to show both this point and the origin.

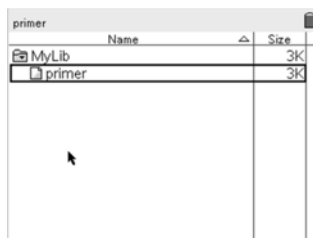
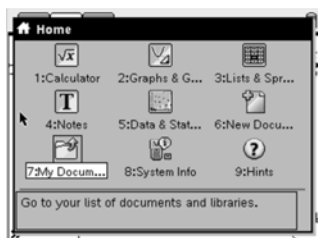
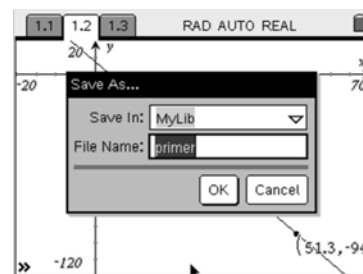


**** Helpful Hint:** Move between pages by pressing and then left/right arrows.

V. Saving a Document

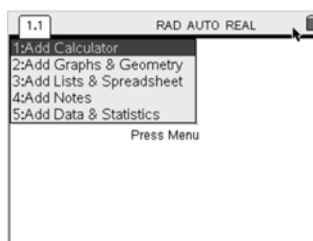
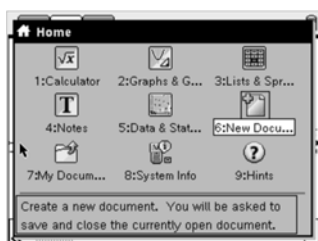
So far we have created three pages - 1.1, 1.2, 1.3. To save your work, press **(ctrl)(S)**. Assuming you haven't already named the current file, the 'Save As...' dialog will appear. The default folder is set to MyLib. Press **(tab)** to move the cursor to File Name. Use the small green keys to type 'primer' and then press **(enter)** to save. You have just saved your first document on the Nspire.

To verify that it has been saved, let's take a look in the My Documents folder. Press Home **(home)** and select 7:My Documents by pressing the number 7 (or arrow down and press **(enter)**). You should see the 'primer' document in the MyLib folder.



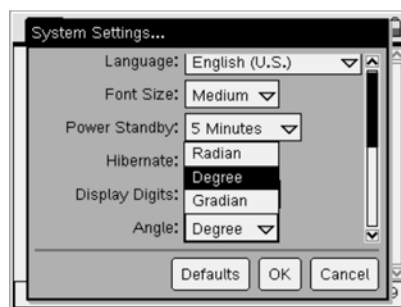
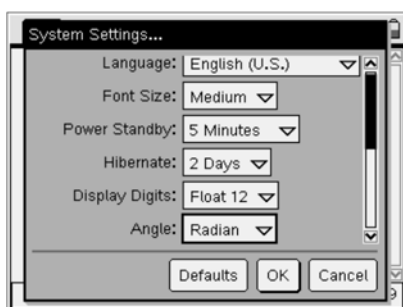
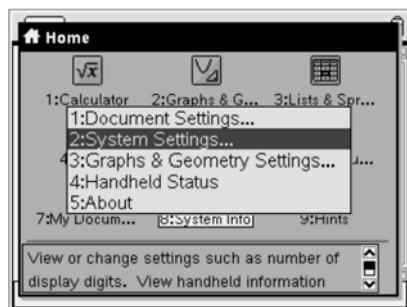
VI. Opening a new Document (Getting a fresh start!)

To open a new document, press **(home)** and select 6:New Document. If you currently have an unsaved document open, you will be prompted to save the current document. The keypad shortcut for opening a new document is **(ctrl)(N)**.



VII. Modify Settings

To access the mode settings, press **(home)** and select 8:System Info. Select option 2:System Settings. Suppose we wanted to change the angle mode from radian to degree. Tab down to Angle and click **(right arrow)** to view the options. Use the NavPad to select Degree. Press **(enter)** twice to save the change. If you are prompted to apply the change to the current document, press **(enter)** on Yes.



About Information

To determine the version of the operating system of your Nspire, open the 'About' information by pressing **(home)(8)(5)**. Verify that you are using version 1.7.

What are the last four characters of the Product ID? _____

