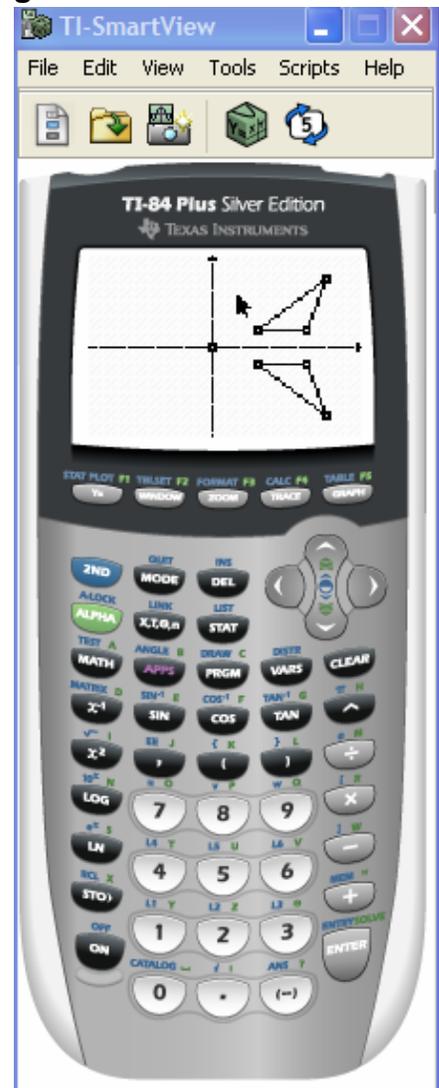


TI-SmartView 2.0 The Emulator Software Package for the TI-84+

revised February, 2006, for 2.0 added features

FEATURES

- A visual **demonstration tool** for the classroom – students easily see what keys are pressed and what the results of those key presses are
- An extremely powerful tool when used in **conjunction with SMART Boards** or other interactive white boards
- A handy **desktop computer aide** that eliminates the hassle of wires and carrying around a handheld
- **View³ (Tri-view)**: Graph, Equation, Table – all 3 at once!
- **Big screen viewing** – for the kids that sit in the back!
- Instant **screen capture** features with multiple screen shots – can be used in place of TI-Connect
- **Drag-and-drop screen shots** into Word, PowerPoint, SMART Notebook, and other software
- **Key press history** that is visually available upon demand which can be easily copy and pasted into documents
- Have **multiple versions or “states”** of the 84+, one for each class period, one for each APP -- an endless number of possibilities
- **Scripts**: Preloaded step-by-step “videos” that help teachers and students understand the use of the calculator. Also easily create your own scripts – and play them in a regular speed, slow motion, or one step at a time
- **Maneuver in multiple ways**: use either your mouse, your computer keypad, or even your fingers. Now control it **with a connected calculator!**
- **Connect a CBL2 or CBR2** directly to the computer, then graph and analyze the data.



Equation

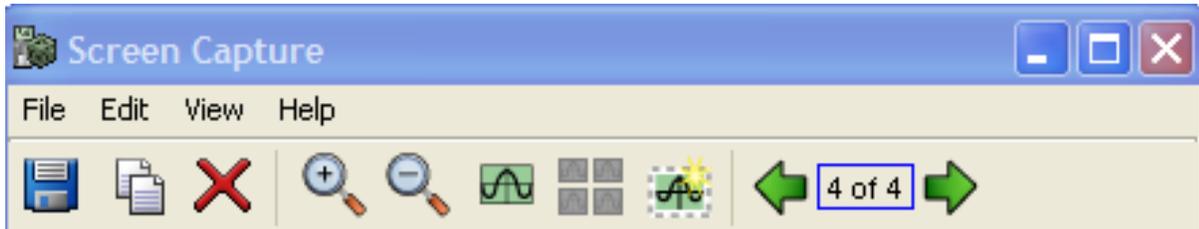
X	Y ₁	Y ₂
-1	0	0
0	-1	1
1	0	2
2	3	3
3	8	4
4	15	5
5	24	6
6	35	7

Table

Graph



Screen capture

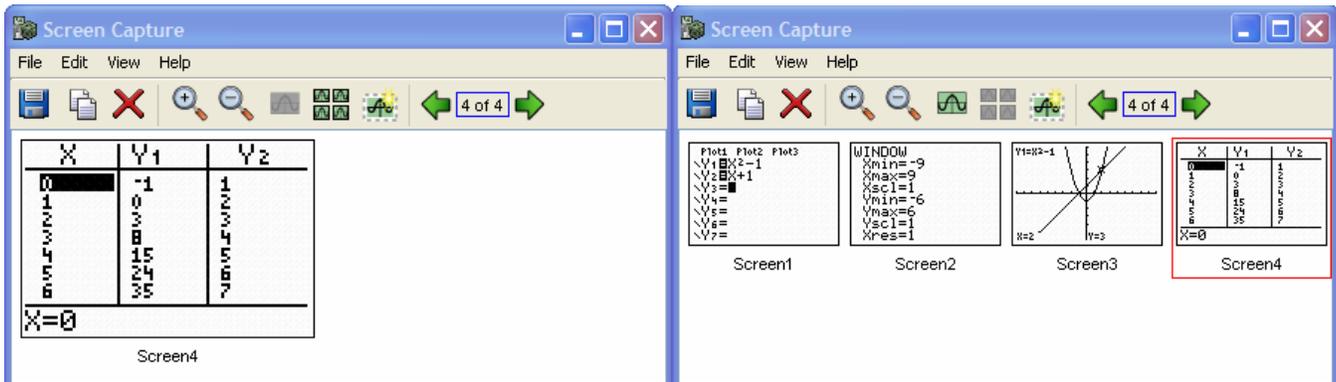


A B C D E F G H I

- A Save the selected screen shot
- B Copy the selected screen shot to the clipboard
- C Delete the selected screen shot
- D Enlarge all screen shots
- E Reduce the size of all screen shots
- F View screen shots one at a time in a “stack”
- G View screen shots as thumbnails in a group
- H Add/remove a border around the selected screen shot
- I Advance through the screen shots when in a stack

F View screen shots in a “stack”

G View as thumbnails in a group



NOTE: If you want to place a screen shot into a document, **to get the best resolution**, use the magnifying glass with a '+' on it to make the screen shots their largest. Then drag and drop, or copy and paste, that largest screen shot into the document. *If you have to resize the image, it retains the best resolution.*

Unexpected Screen Shot Capabilities THIS IS A HUGE DEAL!!! MY FAVORITE!

If you wish to put a screen shot immediately into a Word document, or into the SMART Notebook, all you have to do is click on the SmartView screen and drag it into Word or into Notebook and Voila!... the screen shot is there! You don't have to click the camera first and then go to the Screen Shot screen. This is immediate. With a SMART Board, you can use your finger to drag the screen, but with Word, it's best to use your mouse. ☺
 One small disadvantage is that there is no border around the screen shot, but if you can live without the border...

Also, you can drag right off the View³ screen and it will supply the border. AWESOME!

Key Press History (“Hey, teach, what were the last 5 keystrokes you said to do?”)



NOTE: You can easily clear the Key Press History at any time.

Now you can readily import colorful keystrokes into your presentations, worksheets, and gifts.

“Old way”

“New way”

3.

L1	L2	L3	10
1	1.09	-----	
5	2.05		
15	4.45		
26	7.09		
32	8.53		

L2(6) =			

This is what your STAT Edit screen should look like.

3. To get to the Statistics Editor, type:
 Then type in the following data in lists L1 and L2:



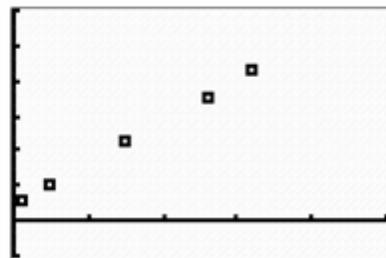
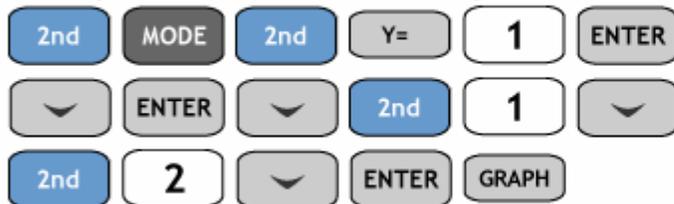
L1	L2	L3	2
1	1.09	-----	
5	2.05		
15	4.45		
26	7.09		
32	8.53		

L2(6) =			

This is what your STAT Edit screen should look like.

This is so much easier for the reader to follow:

Set up the STAT PLOT and Graph:



And all you have to do, is to select the keystrokes in the Key Press History, Copy, then Paste into the document of your choice. It is almost too easy. **No, it *IS* too easy.**



Here are the selected keys pasted:



“States” of the calculator – a very important feature of the emulator that needs clarified.

Scenario 1

The class ends in two minutes and you are not going to finish today’s graphing calculator activity. You have values stored in several variables. You have several equations typed into the $y=$. You have data in the lists. You have the window set up just like you want.

But now you have to stop and teach your next class and that is going to wipe out some, if not all, of your hard work. You are going to have to retype all that information back into your calculator tomorrow.

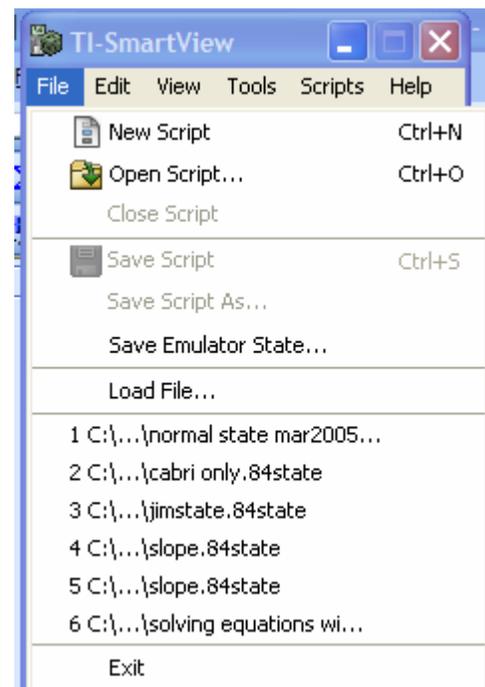
NOT A PROBLEM!

Just save the current “state” of your calculator. What this does is saves your calculator exactly as it is at this moment – a perfect replica, a perfect clone. Save it with a name that you will remember, like:

FridayApril82005Algebra1Period3

For your next class, you can do whatever you want with your calculator. You can even save that “state” if you so desire.

But on Monday, April 11, 2005, you turn on your TI-SmartView, load the above “state” and your calculator is exactly how you left it at the end of the class, right where you want it. You will absolutely love this feature.



NOTICE all the “states” I have saved so far in the graphic to the above and right.

Scenario 2

I really like to use the Study Card APP in my classes when it is appropriate. So I have created several Study Card stacks. They can’t all fit into the memory of my calculator.

SOLUTION? Create and save a “state” for many different sets of Study Card Stacks.

So I have created several different “states” of calculators – one for each group of stacks.

For example, I can have one state called: StudyCardsBasicGraphs

Another called: StudyCardsPower1ThroughPower13

And so on...

Scenario 3

You teach Geometry and use the Cabri Jr APP often. The files for Cabri Jr can take up a lot of memory. You can't fit too many pre-done Cabri figures on your calculator.

NO BIG DEAL.

First of all take off all the APPS except Cabri Jr. Also take off any APP VARS besides ones used with Cabri Jr. Make a calculator that has as much "free" memory as possible. Save that calculator as a "state" called CABRI ONLY.

IMPORTANT: When you make changes to this "state", decide if you want to save the changes to this "state" or not. Remember to save them as needed. Otherwise the changes are lost.

Scenario 4 What is a normal calculator?

My suggestion is that you create a very standard (normal) calculator, that is, one that has all the APPS and programs and APP VARS that you would consider essential.

Save this "state" as NORMAL or some such name. Or with the word NORMAL, and follow that with the date.

In that way, if you ever goof and don't save the state of the calculator, you can always reload the NORMAL state.

FINALLY On the state of "states"

Be aware that when you close TI-SmartView, the next time you open the program, the "state" of the calculator will be exactly what it was when you closed it last.

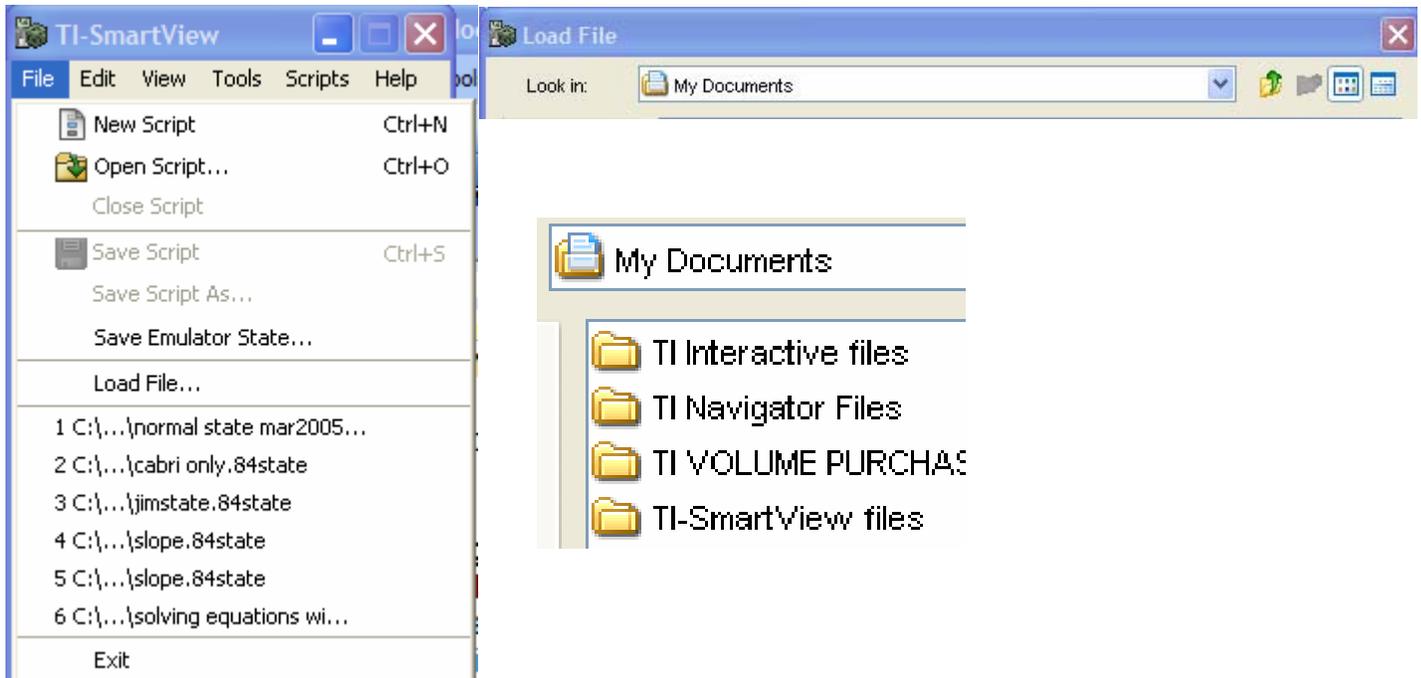
And if you want to keep this "state", you should save it. Otherwise when you make changes, those changes are now part of the new "state".

My suggestion is to save the "state" if you are not sure whether you want it or not.

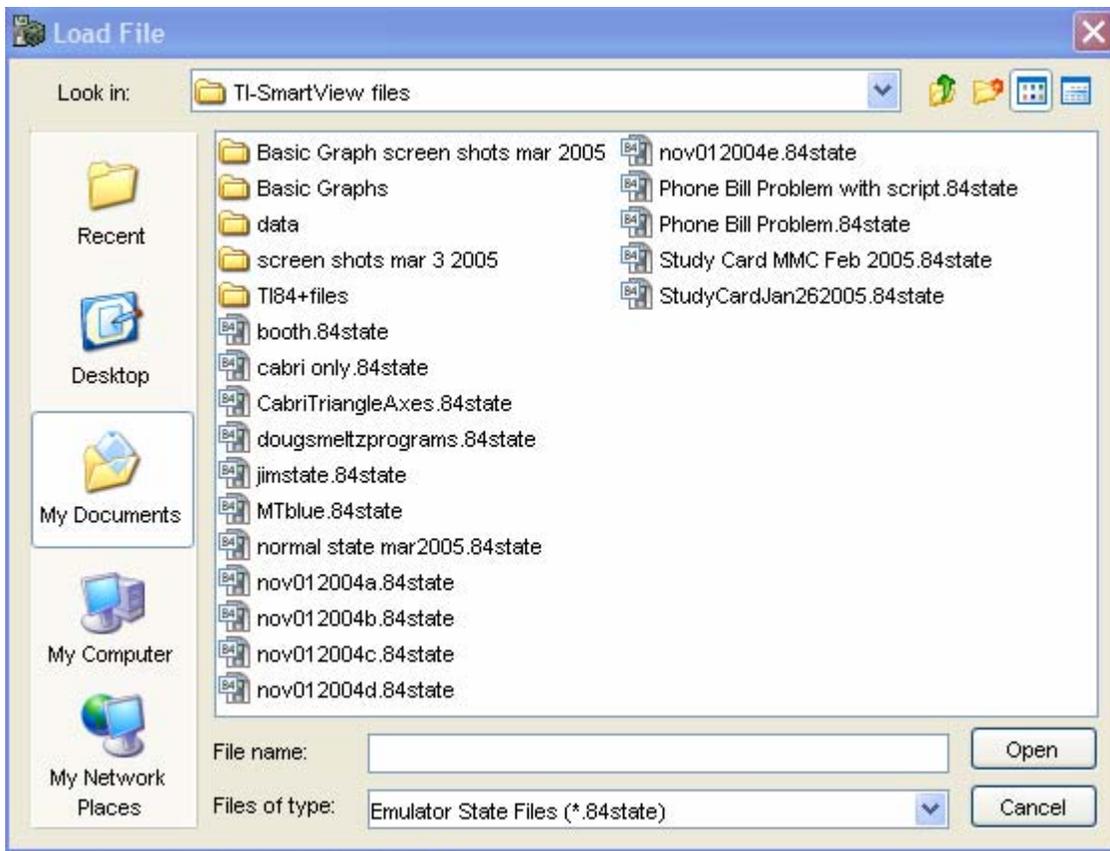
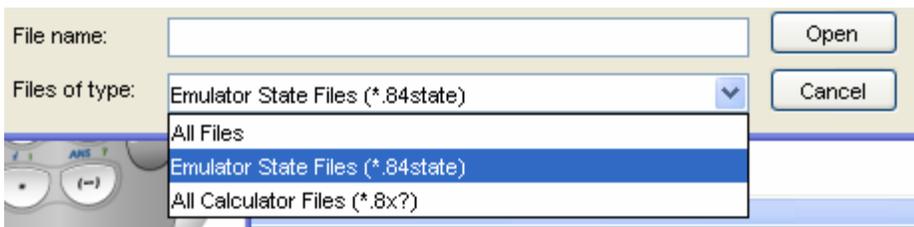
LOADING FILES to the emulator

You can load several types of files to TI-SmartView: APPS, APP VARS, Programs, "states" of the calculator, ... **even an Operating System.**

To Load an emulator "state" file:



Notice that you must specify the type of file. In this case, an Emulator State File (*.84state)

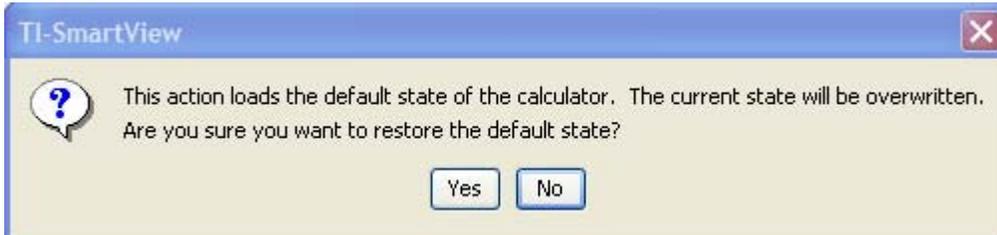


Now just select the “state” you desire and Open it into your emulator. This “state” will replace the one your calculator is currently in.

Obtaining the emulator's default state



If you select “Restore Default State”, you get the following warning.

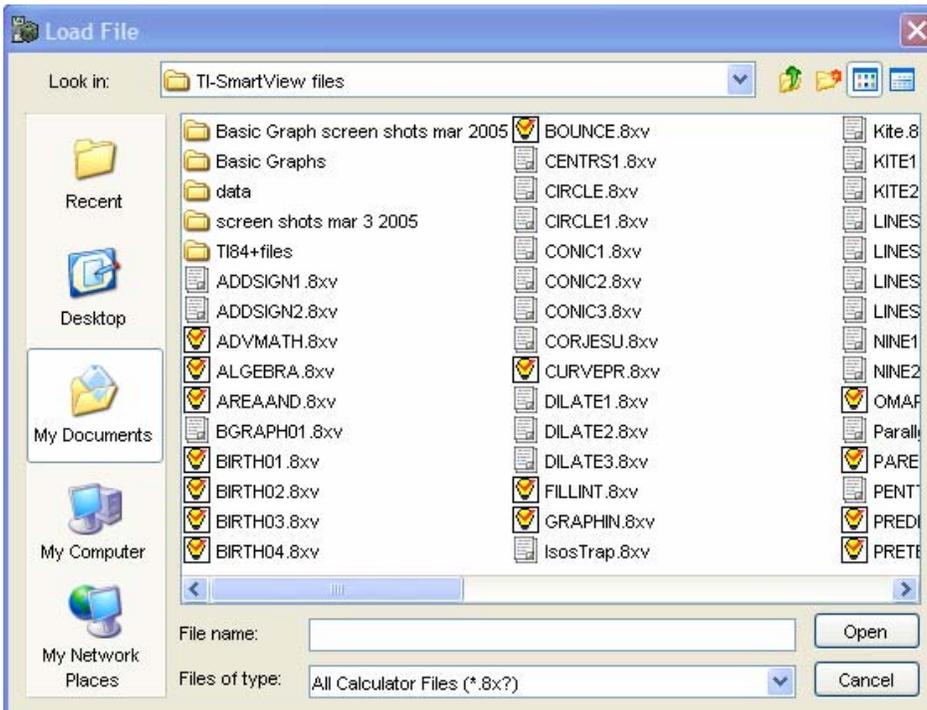


This makes your emulator just like it was when you first installed it. Be aware of that.

LOADING other files

Let's load an APP VAR (an APP or program would be loaded in a similar way)

First: File Load File... from the TI-SmartView menu as you did in the previous example.

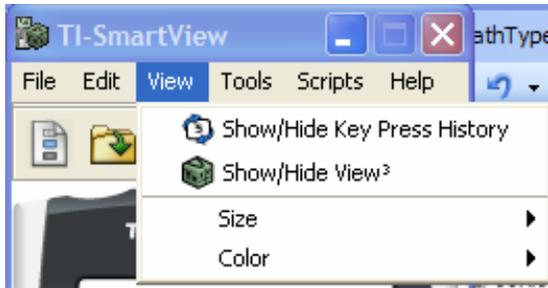


This time you should notice that the type of the files that I wish to consider are “All Calculator Files (*.8x?)”

NOTE: If you wish these files to be archived, you must do so after you load them. That is done the same way you archive on the regular TI-84+.

Size and Color

At the menu, select View.



Size



You should be aware that **size is also a function of your screen resolution**, that is, the size that your emulator appears on the screen of your computer is affected by the screen resolution. My suggestion is to choose a resolution and the size of the emulator that is the same height as the height of your screen.

For example, if your screen resolution is 800 X 600, try the Small Emulator.

If your screen resolution is 1024 X 768, try the Medium Emulator.

If your screen resolution is 1280 X 1024, try the Large Emulator. Experiment until you find the “right size” for you.

Color



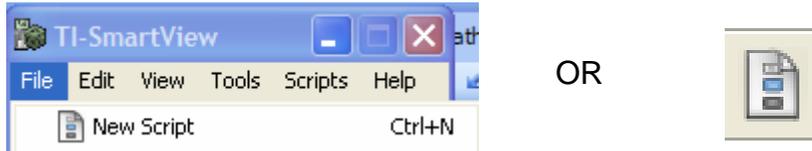
This is completely up to your whim.

Changing the color of your emulator could be highlight of your day sometimes. Unfortunately. ☺

SCRIPTS

This is a very powerful tool. It enables you to create “mini-videos” or “mini-animations” of the emulator. Basically you record any set of keystrokes in order, and then you can play them back. You have control over how fast they are played back: fast, medium, slow motion, and even a manual “step by step.” The software comes with many scripts on the CD. Try some.

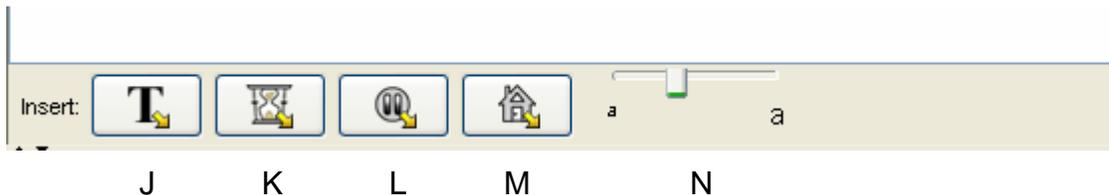
To create a new script, you have two choices:



Once you have decided to create a new script, this is part of the screen that you will encounter. An explanation of some of the icons are explained below.



- | | | |
|------------------------------|----------------|-----------------------------|
| A Record button | D Stop button | G Copy |
| B Play button | E Save to disk | H Paste |
| C Play one command at a time | F Cut | I Slider: Speed of playback |



- J Insert Text (an explanation of what the script is doing)
 K Insert a Delay so that the script slows down (especially useful when graphing several functions at a time)
 L Insert a Pause
 M Insert a Go To the Home Screen (a good way to start any script)
 N A slider that allows you to control how large the text is displayed when playing the script

New Features in 2.0!

Control SmartView with a connected TI-84+

First of all, the connected TI-84+ must have a supported operating system. As of February, 2006, that is OS 2.4. Also the TI-84+ must also have the SmartPad APP installed. Both the Operating System and the APP can be downloaded for free from education.ti.com.

You need to:

1. Run TI-SmartView
2. Connect the standard-to-mini USB cable that came with the 84+. Place the standard end into a USB port into the computer.
3. Connect the mini-USB connection at the top right of the calculator. Very firmly.
4. Turn on the TI-84+ and run the SmartPad APP on the 84+.

Note: the screen of the 84+ will have the following messages on it:

SmartPad v2.1
for TI-SmartView™

To Exit:
Press [2nd] [On]

- or -

Unplug USB cable

5. Press the keys of the TI-84+ to “run” the SmartView emulator. Please note that you cannot see what is taking place on the handheld 84+, you must look at the SmartView to see what is happening. The screen of the 84+ continues to look like the screen shown above.

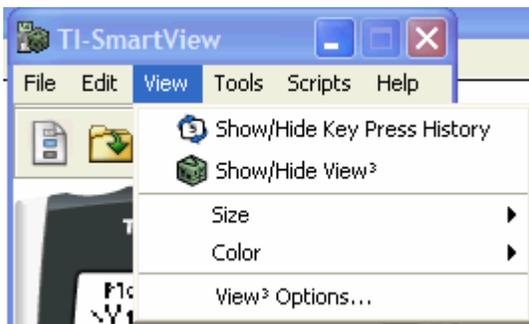
For greater detail, see pages 35 to 39 of the TI-SmartView Guidebook for Windows. It is on the CD that comes with TI-SmartView.

Be aware that your connected TI-84+ can still “fall asleep”. Press the [ON] key to turn it back on and it will still control SmartView.

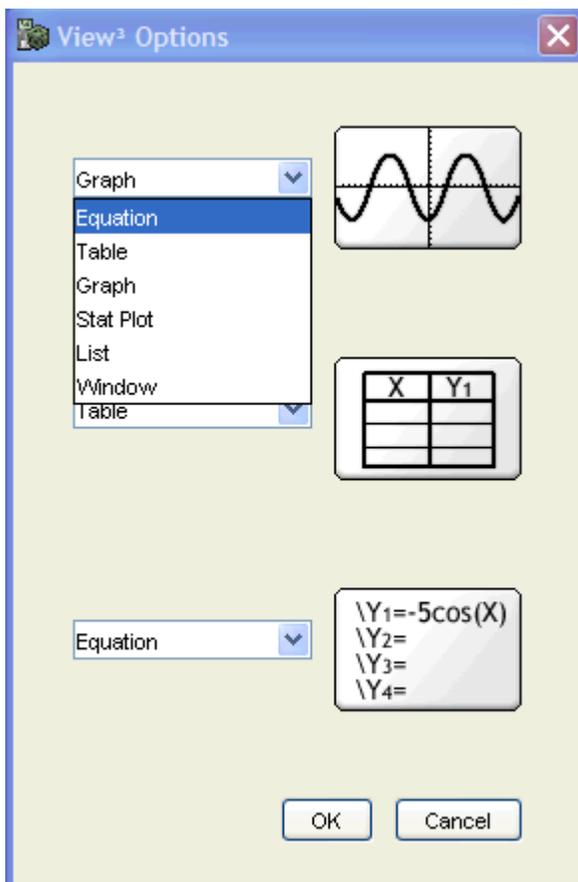
It is recommended that you Exit the SmartPad APP by using [2nd] [ON], not by just unplugging the USB cable.

You Get to Decide What is on the View³ Screens!

In SmartView, choose the View command,



and then the View³ Options...



You get to choose what you want to be displayed for each of the three “views”.

So if you would like the Window to be displayed as one of the options, ***it is your choice.***

Ain't life grand!

So in reality, you can really view 4 screens at a time. The home screen plus the 3 that you have chosen.

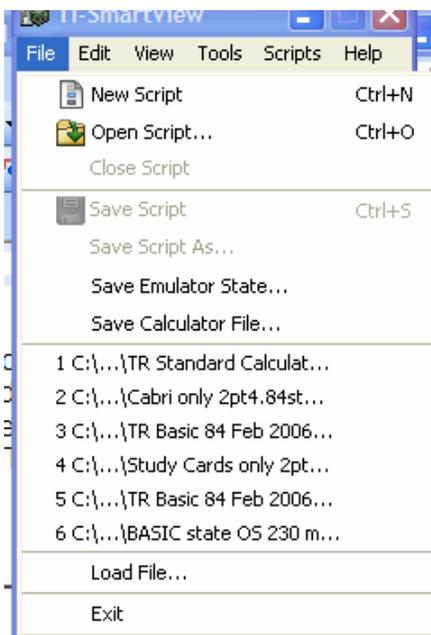
Save TI-SmartView data to your computer

Suppose you have lists, programs, matrices, and so on, that are on the TI-SmartView emulator, and you would like that data to be transferred to a hand held 83/84 (or to all the hand held 83/84's in your classroom via TI-Navigator). It is very easy to put that data onto your computer and then transfer it to the individual calculator via TI-Connect or to a whole class set of calculators via TI-Navigator.

For example, suppose you had the data shown to the right typed into lists L1 and L2 of your SmartView calculator. If you wanted to transfer that data onto your computer:

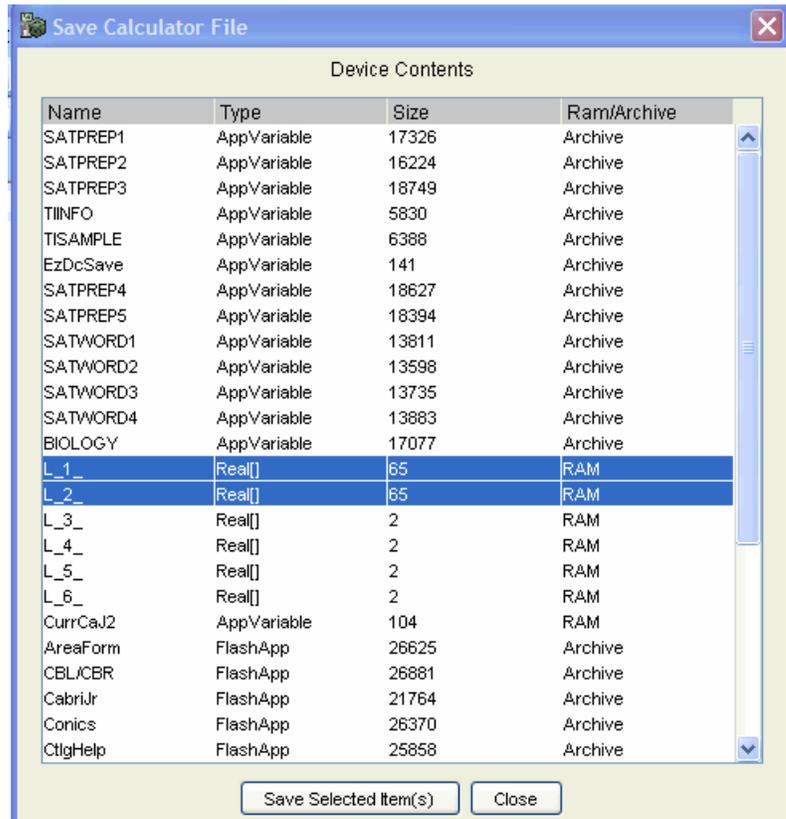
L1	L2	L3
<pre> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 </pre>	<pre> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 </pre>	<pre> ----- </pre>
L3 =		

Select the "File" command:



Select the "Save Calculator File..." feature

Select the two lists: L1 and L2 (use the [Ctrl] key)



Click on "Select"



5. On SmartView, click APPS, and choose CBL/CBR

```

APPSCATALOGUE
1: Finance...
2: AreaForm
3: CabriJr
4: CBL/CBR
5: Conics
6: Ct19Help
7: EasyData
    
```

6. Just follow the directions ...

A)



B)

```

CBL/CBR APP:
1: GAUGE
2: DATA LOGGER
3: RANGER
4: QUIT
    
```

C)

```

TEXAS INSTRUMENTS
RANGER (V1.0)
PRESS [ENTER]
    
```

D)

```

MAIN MENU
1: SETUP/SAMPLE
2: SET DEFAULTS
3: APPLICATIONS
4: PLOT MENU
5: TOOLS
6: QUIT
    
```

E)

```

UNITS
1: METERS
2: FEET
    
```

F)

```

APPSCATALOGUE
1: DIST MATCH
2: VEL MATCH
3: BALL BOUNCE
4: MAIN MENU
    
```

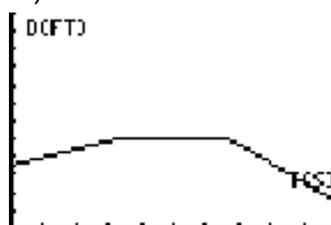
G)

```

TRY TO MATCH THE
GRAPH ON THE
NEXT SCREEN

STUDY THE GRAPH
THEN PRESS
[ENTER] TO START
    
```

H)



I) I am not going to embarrass myself and show you what I did. I will let you think that I did great.

You "get the picture." ☺

Similar results can be had with a CBL2. Consult the manuals for proper operation.

Linking Back and Forth between the SmartView emulator and the Connected TI-84

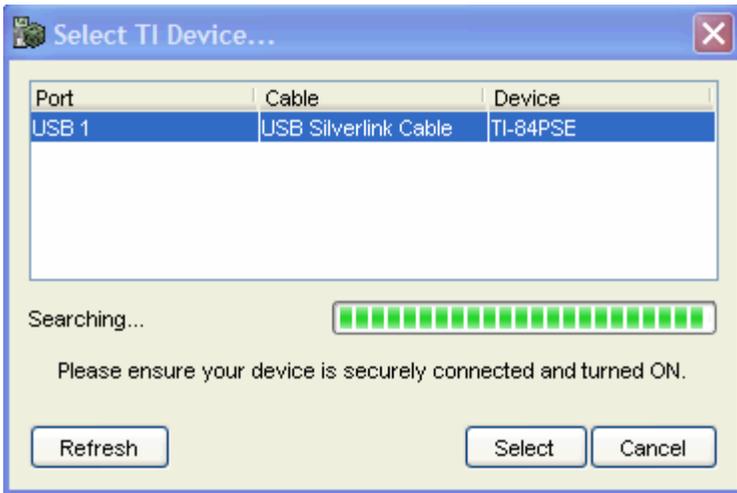
Now you can treat your virtual calculator just like a handheld calculator and share any files between them.

To Send Files from the Handheld TI-83/84 to the Virtual TI-SmartView emulator:

1. Using the silver TI-Connect cable, connect your handheld TI-83/84 to the computer.
2. The SmartView software should be running.
3. Click on Tools, Establish Connection.



4. Select with your mouse the USB that says the device is your TI-83 or TI-84, then click on Select:



5. On the SmarView emulator,
 $\langle 2^{\text{nd}} \rangle$ $\langle \text{LINK} \rangle$ $\langle \text{RECEIVE} \rangle$ $\langle \text{ENTER} \rangle$



SEND RECEIVE
 RECEIVE

Waiting...

6. On the sending handheld calculator, also

<2nd> <LINK>

Then select the file(s) that you want to send to the emulator.

Then <TRANSMIT>. Just like you would with two handhelds linked together!

To Send Files from the Virtual TI-SmartView emulator to the Handheld TI-83/84:

Just reverse the process. Make the sending calculator the receiving calculator and vice versa.

Miscellaneous Ideas and Comments

1. **Hold down the arrow keys to scroll on SmartView.** You don't have to keep hitting the same arrow key for it to scroll, like we had to do with version 1. Nice upgrade.

2. **You can use the alpha typing mode with the computer keyboard.** If you press the alpha key on SmartView and then type a lettered key on your keyboard, you will get the actual letter. If you wish to type several letters consecutively, use the [2nd] [ALPHA] for Alpha-Lock mode. See pages 42 – 45 in the SmartView windows manual.

3. **I strongly suggest that you get a USB extension cable.** The USB cable that comes with the TI-84+ is not sufficiently long enough for classroom use with a SMART Board. I purchased a 10 foot extension cable from Radio Shack. It is described as A/Male to A/Female USB Extension Cable. The part number is 26–193. It costs approximately \$25. This has worked very well for me. I would think you could get similar extensions at other electronics stores.

Note: It is not recommended to extend the cable longer than 16 feet or using more than one extension on an item.

4. **Create your “standard” state of your calculator and save it.** On the SmartView emulator, take off all the APPS that you don't think you will ever use. For example, I took off all the non-English APPS. I just don't see myself using the French Study Card APP. ☺ Once you have on SmartView exactly what APPS you want, save it with an appropriate name.

For example: TI-84+ Standard State Feb 2006 2pt4

2pt4 is an indicator to me that the Operating System is 2.4. The syntax for naming will not allow us to use a period in names of files.

5. **Create a “Cabri only” state or a “Study Card only” state.** Create several states that are ready for you to use and have lots of memory on them. If you teach geometry, have a calculator that only has the Cabri APP on it, so that you have plenty of room for the figures that you create. If you use Study Cards a lot, have a state with just the Study Card APP and hundreds of the Study Card stacks.

I hope that you found this to be helpful to you to understand the incredible power of TI-SmartView. Please contact me with other suggestions and/or corrections.

Peace,

Tom Reardon
aust_tr@access-k12.org
www.TomReardon.com

“Mathematics is the garment that we continuously alter with our students, and technology should be seamlessly interwoven throughout its fabric.”

- Tom Reardon