

The CASIO ClassPad and Examples



CASIO ClassPad 300 and ClassPad Manager Software Version 2.0

www.classpad.org

www.casio.com

www.casio.co.jp/edu_e/support/

Main

Mathematical calculations with an easy to use computer algebra system (CAS).

eActivity

Input math and text, create and save activities, drag and drop to other applications.

Verify

Verifies your work (available from within Main or Verify).

Statistics

Input lists of data, obtain statistical results and draw stat graphs.

Spreadsheet

Similar to a standard spreadsheet application with the added ability to use CAS commands.

Graph & Table

Graph functions and relations, view properties and data tables.

Sequence

Solve, graph and create tables for recursive and explicit equations.

Conics

Graph a conic section, transform an equation into a conic form and view properties.

3D Graph

3 Dimensional graphing.

Geometry

Constraint based Geometry designed to interact with Algebra.

NumSolve

Solves an equation based on know values input by the user.

Presentation

Allows you to create a slide show.

Program

Create custom programs.

Communication




Link to a PC or another ClassPad 300.

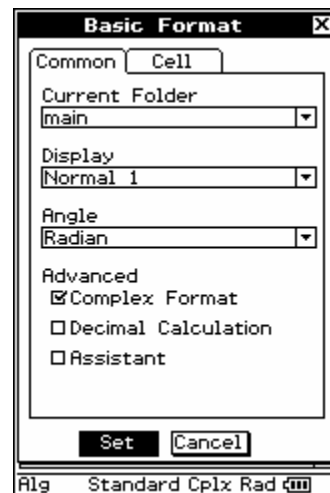
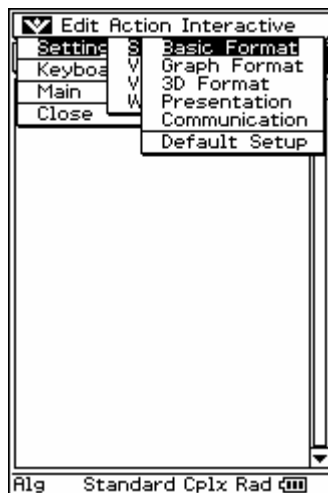
System

Memory management and other system configurations, including setting the contrast.

Hi! Each page of this handout introduces you to a different feature of the ClassPad. To ensure that you get the same results as we do, please make sure your status bar displays the same settings.




Setting the Result Type

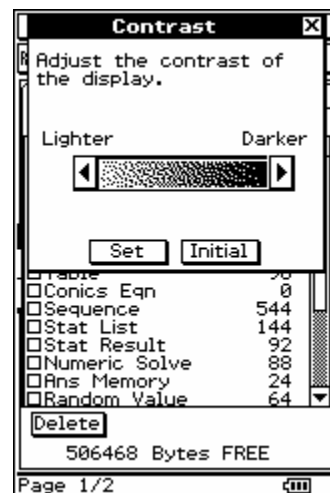
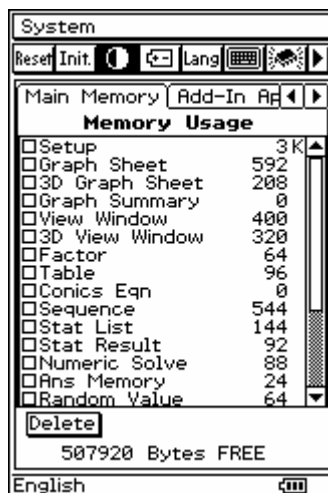
- Tap  and then 
- Select  and then **Settings / Setup / Basic Format**
- Make sure your **Basic Format** settings are the same as our settings
- Select **Set**
- You can do this within any ClassPad application
- Notice that some of your Basic Format settings show in the **status bar**



Setting Contrast



***Handheld ClassPad 300 Only**

- Tap  and then 
- Tap  (on the toolbar)
- Adjust the contrast
- Select **Set**




Using the Main Application

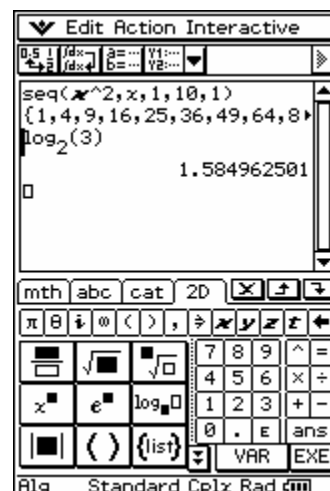
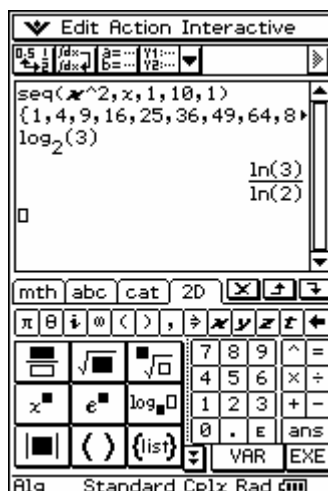
Creating a Sequence

- Tap  and then 
- Input $x \wedge 2$
- Select x^2
- Open the **Interactive** menu
- Select **List-Create** and then **seq**
- Fill in the data and select **OK**
- You will see {1,4,9,16,25,36,49,64}



Using 2D Math



- Press the **Keyboard** key
- Tap the **2D** tab and select \log_{\square}
- Input 2
- Press the right cursor key 
- Input 3 and press **EXE**
- Tap on the line containing $\log_2(3)$
- Tap $\frac{\square}{\square}$ to see decimal result

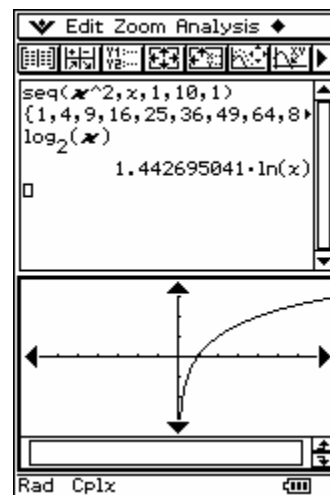
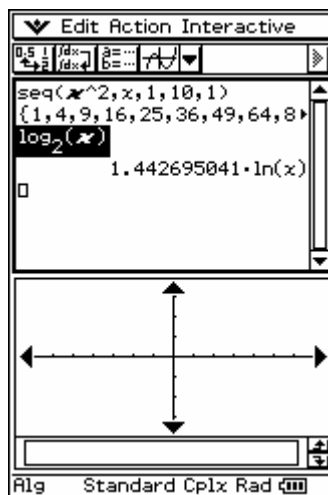


Editing Data

- Select the 3 in $\log_2(3)$
- Tap the x key and press **EXE**

Graphing within Main

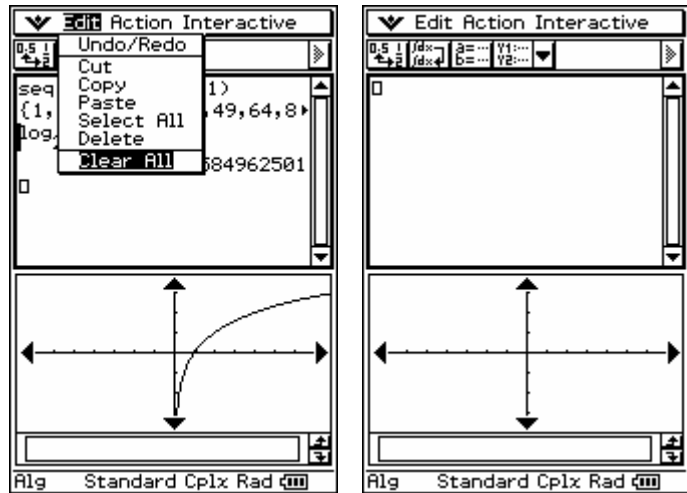
- Tap the  arrow and select 
- Select $\log_2(x)$ and release
- Drag the selection to the graph window



Using the Main Application (continued)

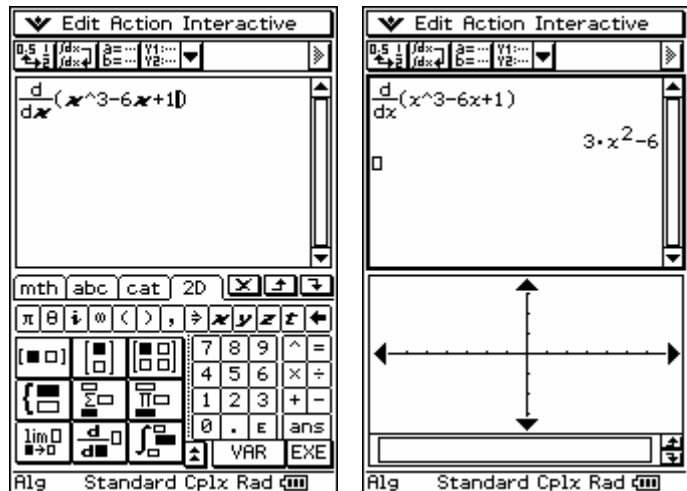
Clearing the Work Area

- Tap in the **Main** application window
- Select **Edit** and then **Clear All**
- Select **OK**
- Tap in the **Graph** application window
- Select **Edit** and then **Clear All**
- Select **OK** and then tap in the **Main** application window again



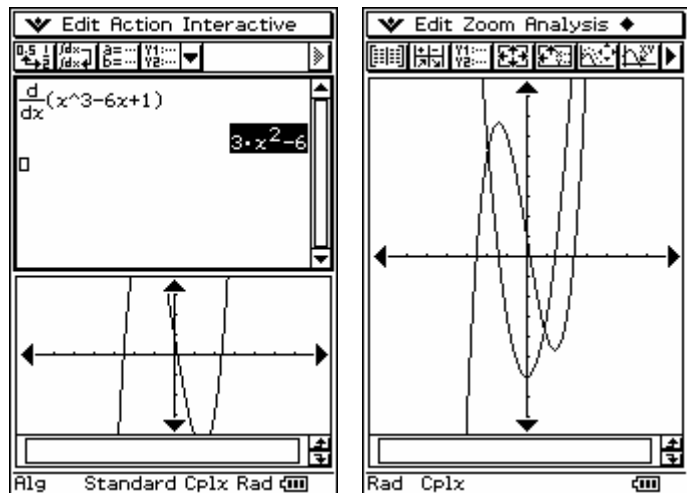
More 2D Math

- Press the **Keyboard** key
- Tap the **2D** tab and then ∇
- Select the **2D derivative** symbol
- Tap the x key
- Press the right cursor key \rightarrow
- Input $x^3 - 6x + 1$ and press **EXE**
- Press the **Keyboard** key again





More Graphing within Main

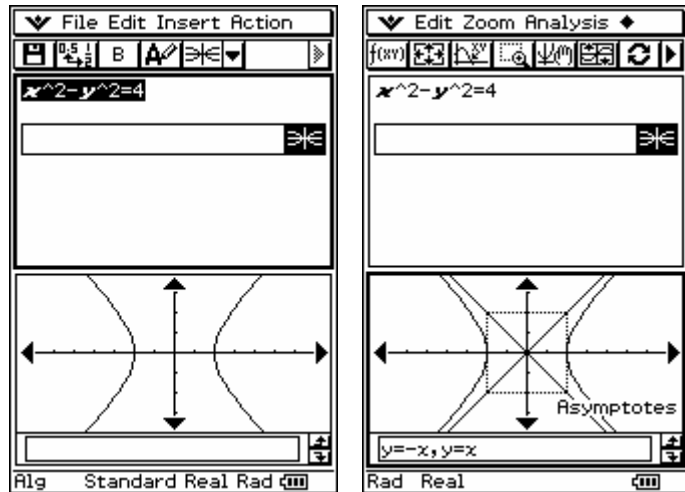
- Select $x^3 - 6x + 1$ and release
- Drag the selection to the graph window
- Tap $3x^2 - 6$ (the result) to select it
- Drag the selection to the graph window
- Tap the **Resize** icon (just above the hard cursor key)






Using other Applications within eActivity

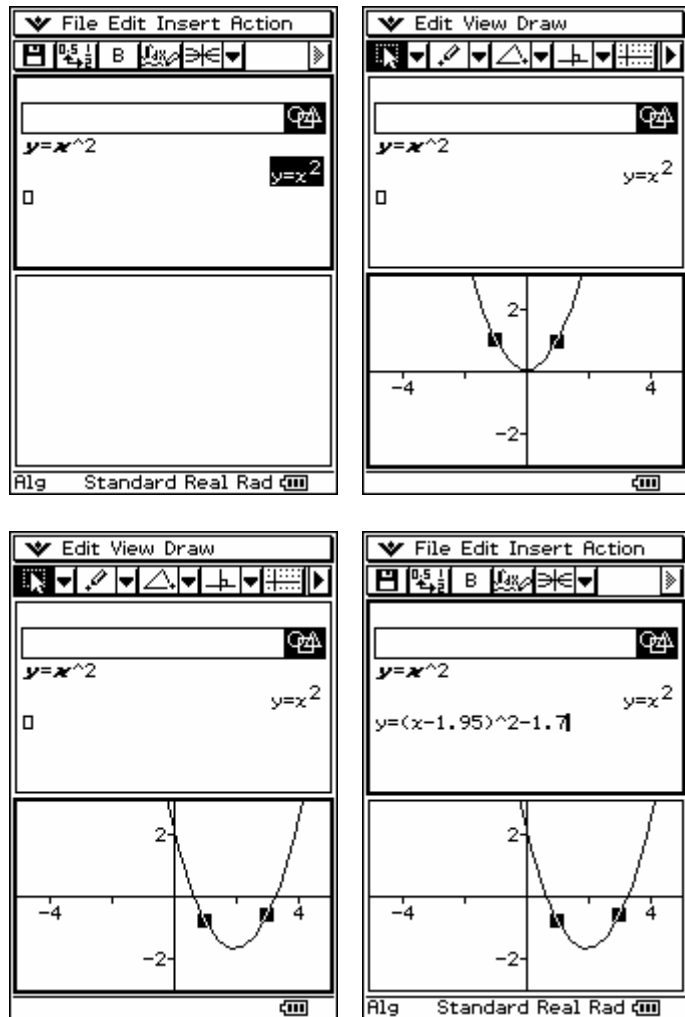
Drawing an Implicit Function

- Tap  and then 
- Select **Edit** and then **Clear All**
- Input $x^2 - y^2 = 4$
- Open the **Insert** menu and select **Conics Graph**
- Select $x^2 - y^2 = 4$ (drag over it)
- Press on the selection and **drag** to the Conic window, then release
- Open the **Analysis** menu
- Select **G-Solve** and then **Asymptotes**





Shifting a Function

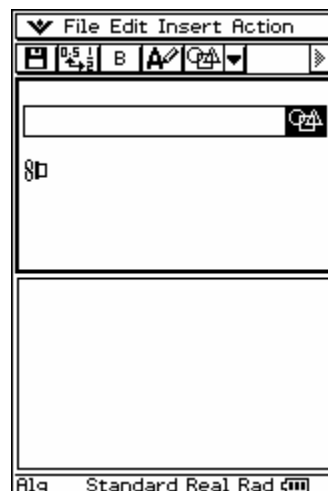
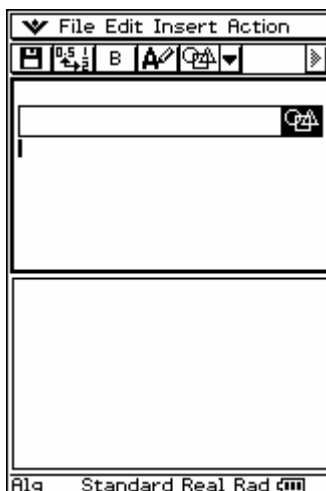
- Tap in the **eActivity** window
- Open the **File** menu and select **New**
- Open the **Insert** menu and select **Geometry** (not Geometry Link)
- Tap in the **eActivity** window
- On the toolbar, tap  to toggle it to  (changing from text to math input mode)
- Input $y = x^2$ and press EXE
- Select result ($y = x^2$) by tapping it
- **Drag** the selection to the Geometry window
- Tap  twice to turn the axis on
- Select the graph you just drew
- Press on a handle (■) and **drag** to move your graph (release)
- Press on a handle (■) and **drag to the small box in eActivity**
- When you see the cursor blink, release the stylus




Using Geometry Link within eActivity

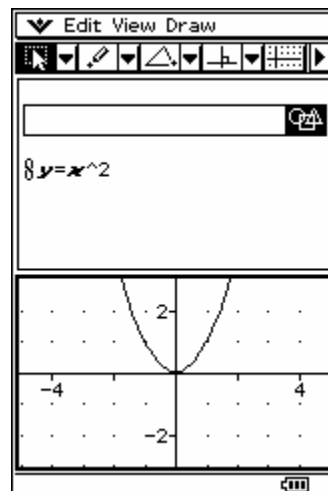
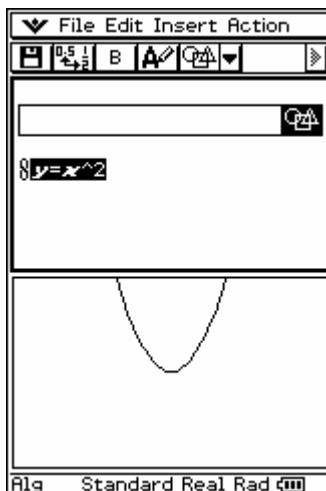
Inserting a Geometry Link

- Tap  and then  (if needed)
- Select **Edit** and then **Clear All**
- Open the **Insert menu** and select **Geometry**
- Tap below the Geometry strip that you just inserted
- Open the **Insert menu** and select **Geometry Link**




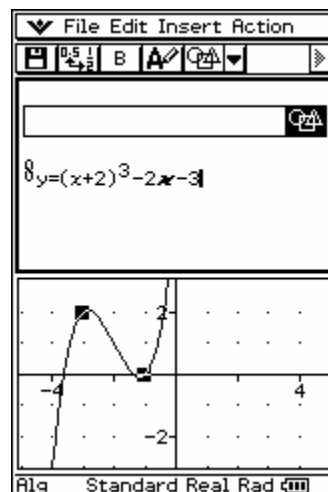
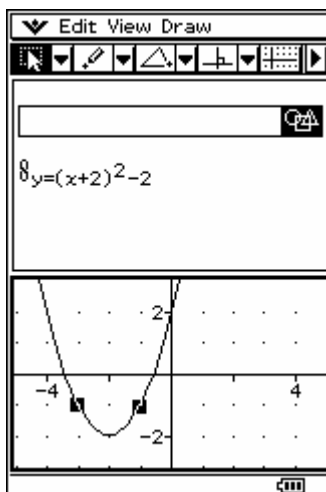
Linking an Equation to Geometry

- Tap in the box just following the link symbol
- Input $y = x^2$
- Select $y = x^2$
- **Drag** the selection to the Geometry window
- Tap  twice to turn the axis on
- Open the **View menu** and **check Integer Grid**



Exploring with the Geometry Link




- **Select** the graph you just drew
- Press on a handle (■) and **drag** to move your graph (notice the linked equation updated)
- Tap in the **eActivity window**
- **Change** your equation and press  (notice the graph updated)
- Try linking and exploring other equations, such as $y = \sin(x)$

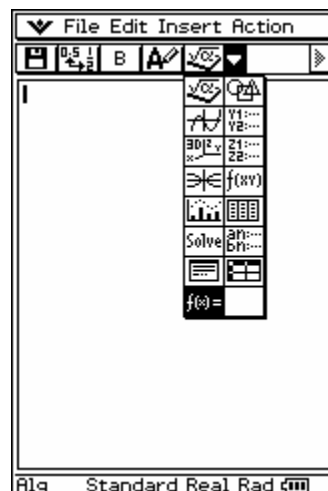
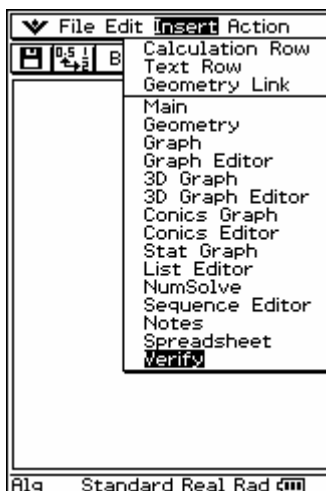


Using Verify within eActivity

**Verify is a new Application for Version 2

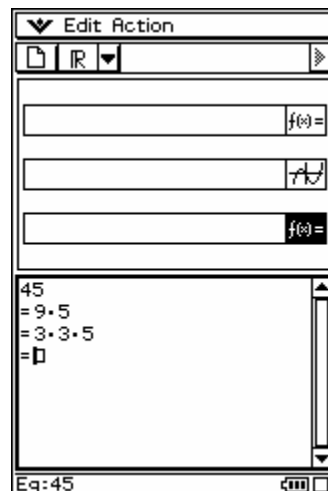
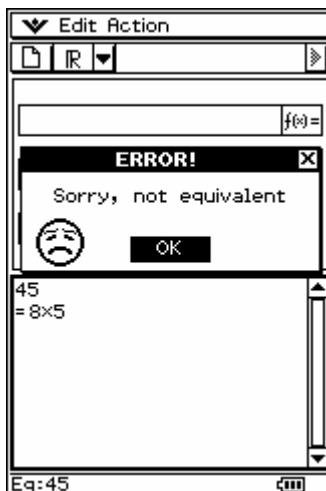
Inserting a Verify Window

- Tap  and then  (if needed)
- Select **Edit** and then **Clear All**
- Open the **Insert** menu and select **Verify**
- Or, you can select Verify's button () from the dropdown button palette
- You will also find Verify's button in the Main application's dropdown button palette






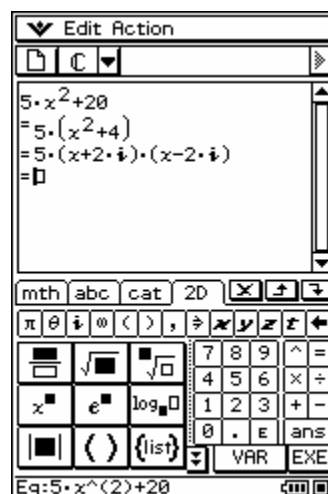
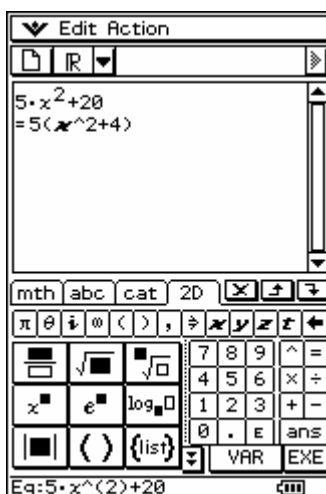
Using Verify Assist in Factoring

- Tap in the **top box**
- Type in **45** and press **EXE**
- To see what happens, type **8 \times 5** in the next box and press **EXE**
- Tap **OK** and change **8 \times 5** to **9 \times 5** and press **EXE**
- In the next box, type in **3 \times 3 \times 5** and press **EXE**





Using Verify Assist in Algebra

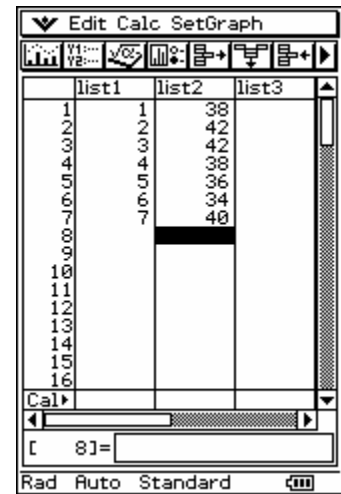
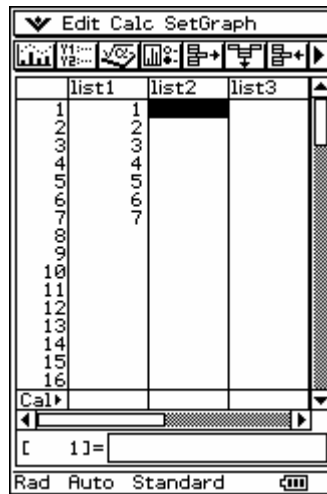
- Tap the  button and select **OK**
- Type in **5x³+20** and press **EXE**
- Next, type in **5(x²+4)** and press **EXE**
- Tap the **down arrow** () on the toolbar and select the .
- Next, type in **5(x+2i)(x-2i)** and press **EXE**
- Thumbs up for complex numbers!



Using the Statistics Application

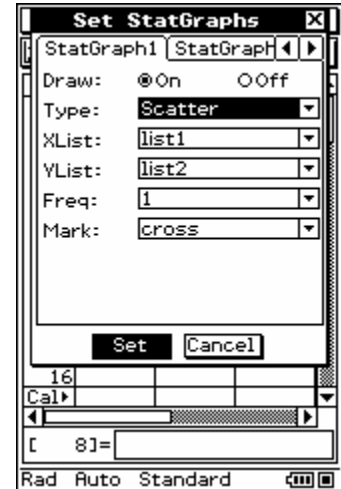
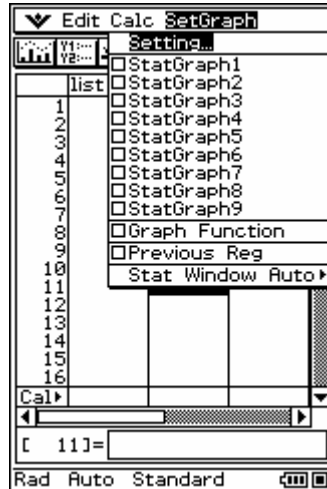
Entering Data

- Tap  and then 
- If needed, open the **Edit** menu and select **Clear All**
- Tap below list1
- **Input data** and press **(EXE)** after each input
- *Data is the low temperature predicted for 12/21/03 – 12/27/03 in Portland, Oregon





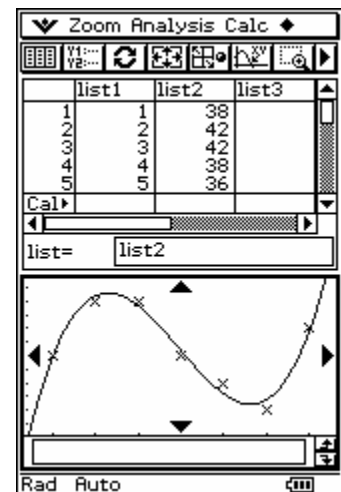
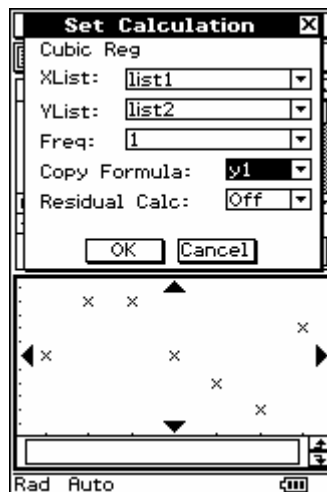
Setting Stat Options

- Open the **SetGraph** menu
- Select **Settings...**
- Setup **StatGraph1**
- Tap **Set**






Graphing Data & Regressions

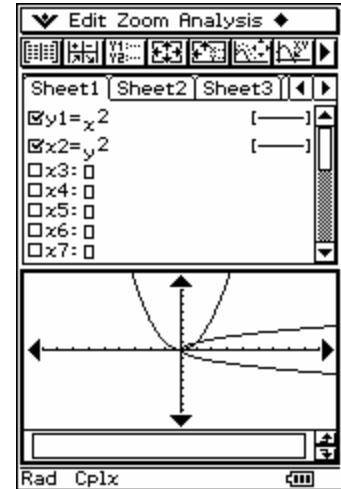
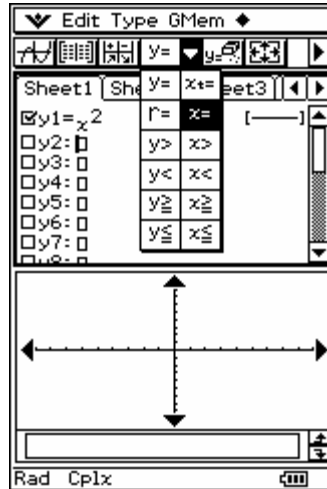
- Tap  to plot your data (first icon on toolbar)
- Open the **Calc** menu and select **Cubic Reg**
- Tap **OK** to both dialogs
- Tap in the upper window
- Tap  again




Using the Graph & Table Application

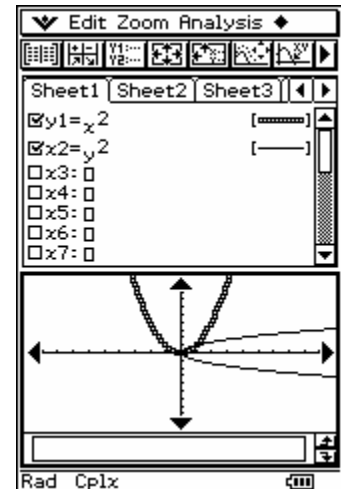
Graphing

- Tap  and then  Graph&Tab...
- Tap in the box following $y1$
- Input $x \wedge 2$ and press EXE
- Tap ∇ on the toolbar and select $x=$
- Input $y \wedge 2$ and press EXE
- Tap  to view your graphs (first icon on toolbar)




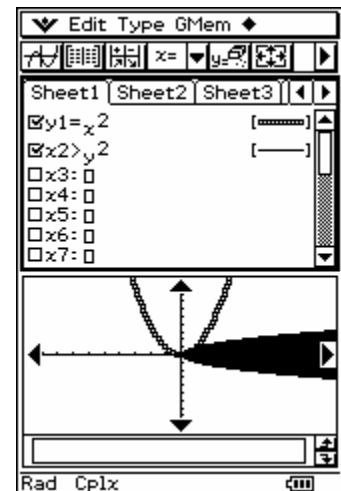
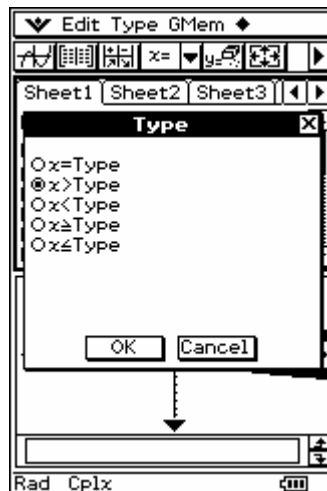
Line Style

- Tap $[-\text{----}]$ to the right of $y1=x^2$
- Tap a different line style and then **OK**
- Tap  to view your graphs





Inequalities and Shading

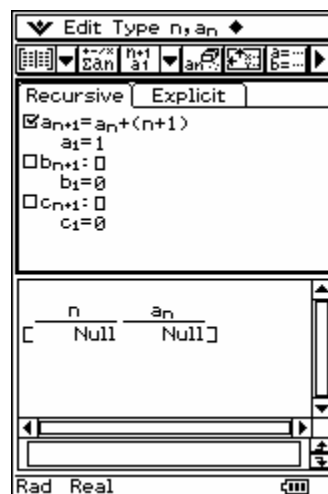
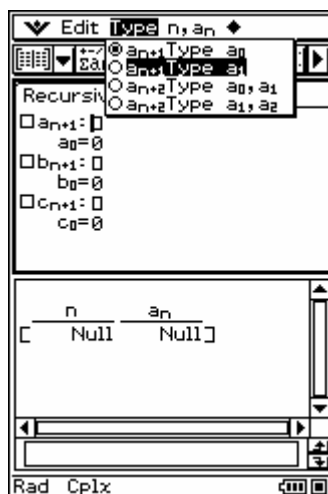
- Tap the = sign following $x2$
- Select $x>$ Type then **OK**
- Tap  to view your graphs





Using the Sequence Application

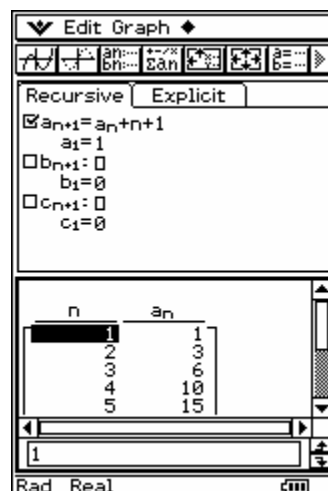
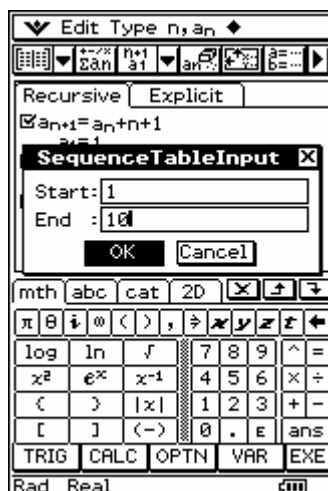
Entering a Sequence

- Tap  and then 
- Open the **Type** menu and select **a_{n+1} Type a_1**
- Open the **n, a_n** menu to find **n** and **a_n**
- Input **$a_n + (n+1)$** for **a_{n+1}**
- Input **1** for **a_1**
- **Check the box** in front of **a_{n+1}**




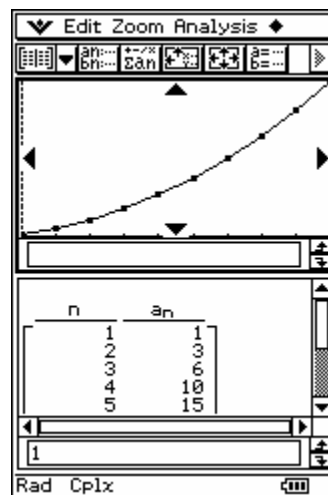
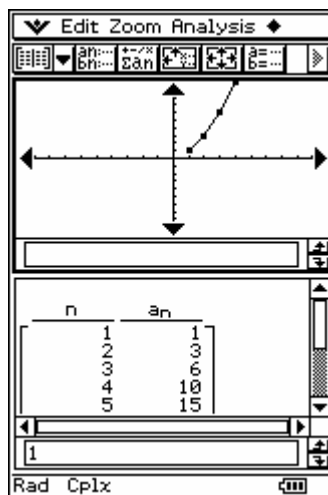
Creating a Table of Values

- Tap the  toolbar button
- Input a **Start** value of **1**
- Input an **End** value of **10** and tap **OK**
- Tap the  toolbar button





Plotting a Table of Values

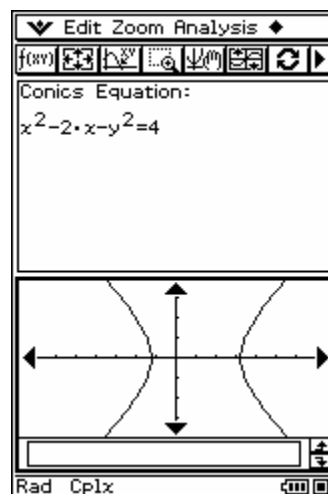
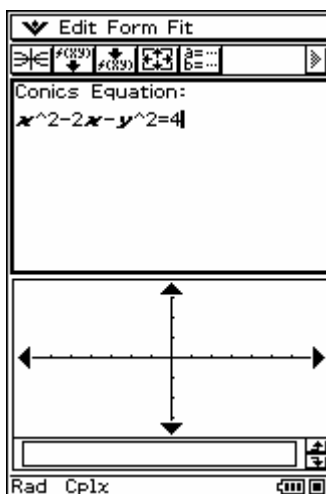
- Tap in the **Table** window
- Tap the  toolbar button
- Open the **Zoom** menu and select **Auto**



Using the Conics Application

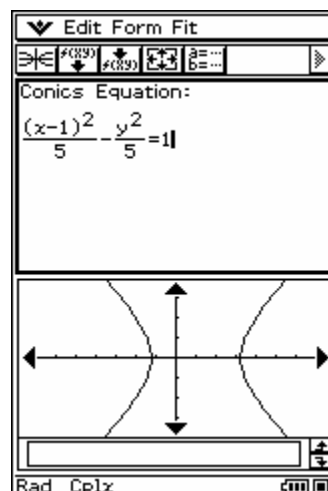
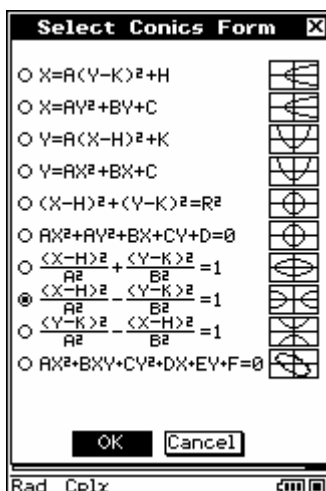
Graphing

- Tap  and then 
- Tap in the **box** below “Conics Equation:”
- Input $x^2-2x-y^2=4$
- Press EXE
- Tap ZOOM on the toolbar
- Open the **Zoom menu** and select **Quick Standard** (if needed)



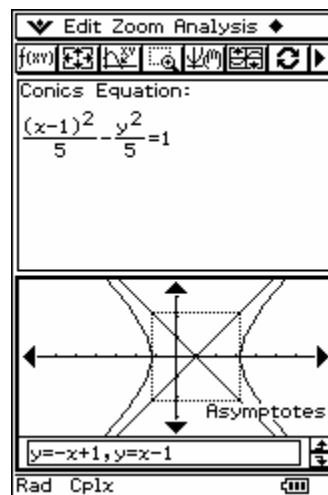
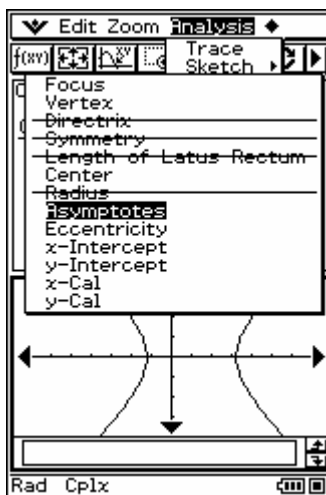
Fitting into a Form

- Tap in the **Conics Equation window**
- Open the **Fit menu** and select **Fit into Conics Form**
- Select the correct form
- Tap **OK**






Drawing Asymptotes

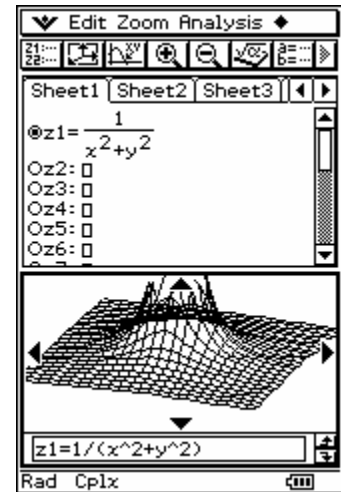
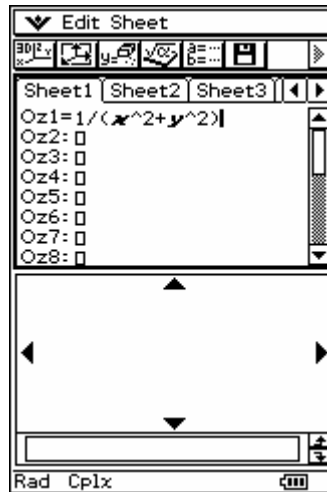
- Tap in the **Graph window**
- Open the **Analysis menu** and select **G-Solve**
- Select **Asymptotes** from the list








Using the 3D Graph Application

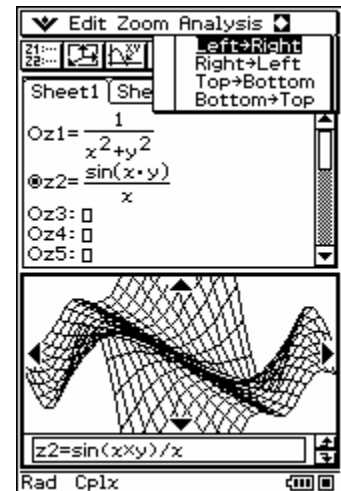
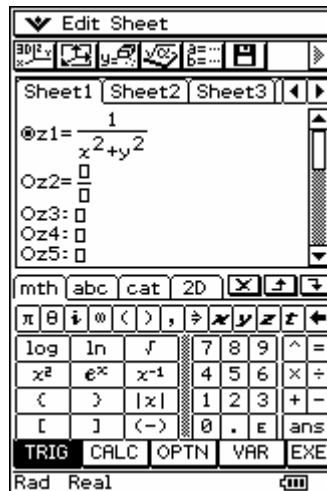
Graphing

- Tap  and then 
- Tap in the **box** following **z1**
- Input: $1/(x^2+y^2)$
- Press **(EXE)**
- Tap  on the toolbar



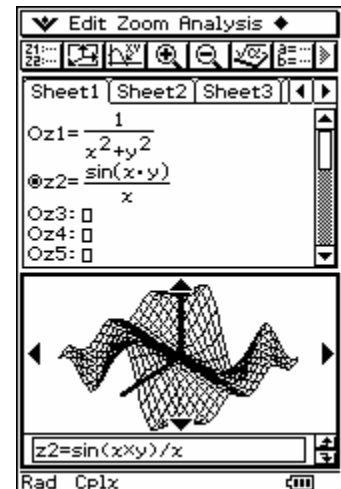
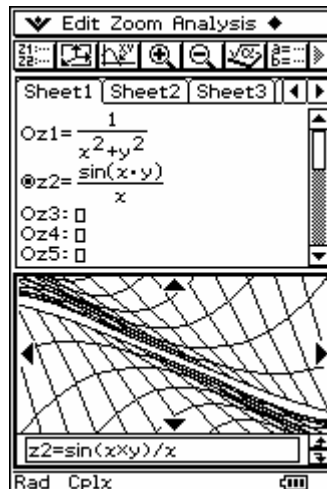
Another Graph

- Tap in the **box** following **z2**
 - Press the **(Keyboard)** key
 - Tap **2D** and select  (fraction)
 - Tap the **math** tab and then **TRIG**
 - Tap **sin** and then input **(x)** **(y)** **(/)**
 - Tap the down cursor key 
 - Input **(x)** and press **(EXE)**
 - Tap  on the toolbar
 - Open the  **menu**
 - Select **Rotating**  then **Left→Right**
- (tap ESC to stop early)






Hot Keys

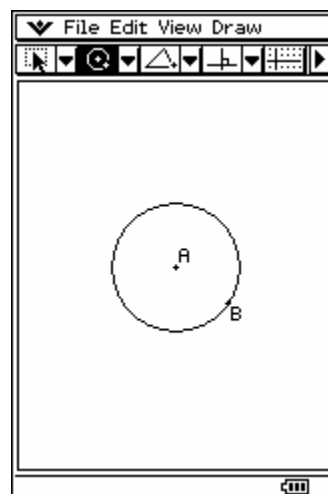
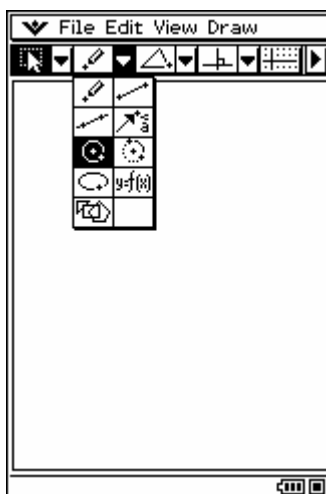
- Tap the **(+)** key
- Tap the **(-)** key
- Tap the **(=)** key







Using the Geometry Application

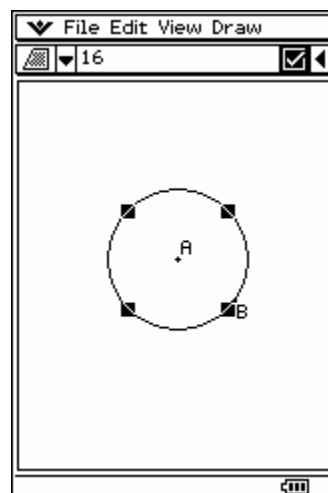
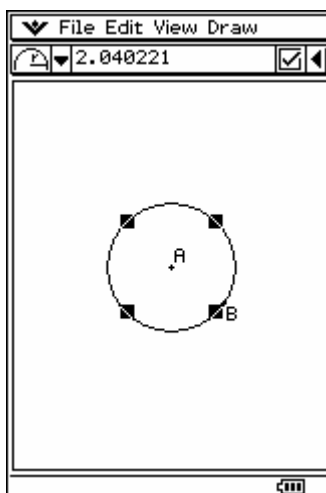
Drawing a Circle

- Tap  and then  Geometry
- Tap the 2nd  and select the **circle** icon
- Tap to create the **center point**
- Tap **another spot** and drag








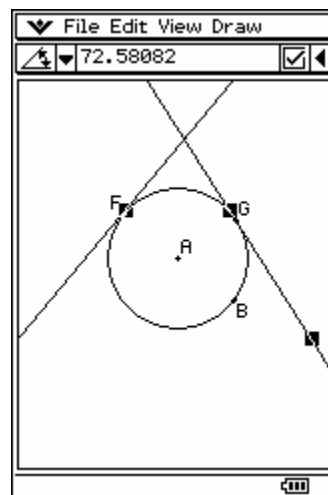
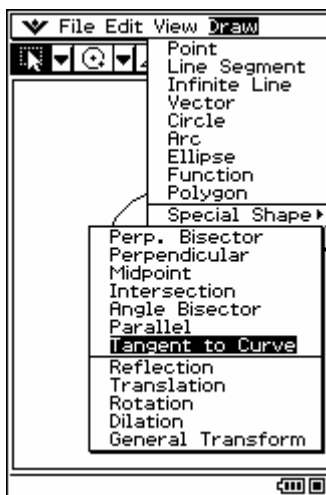
Measuring

- Tap the right most 
- Tap your circle to select it
- Tap  and select  (area)
- Tap in the Measurement box
- Change area to 16 and tap the 







Constructing a Tangent

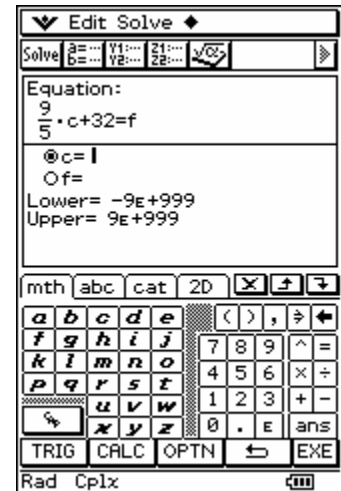
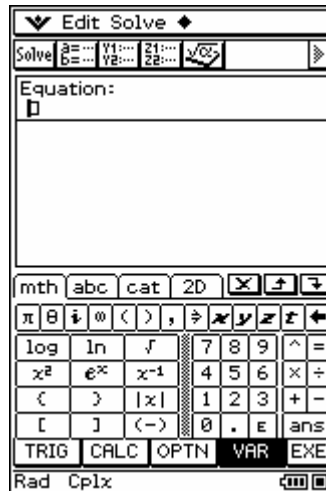
- Tap the right most 
- To deselect your circle, tap in any empty space
- Tap the 4th  and select 
- Tap your circle's circumference
- Select  again
- Tap your circle again
- Tap the right most 
- Tap on each tangent line




Using the NumSolve Application

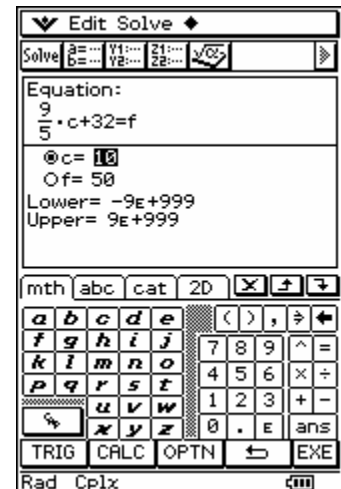
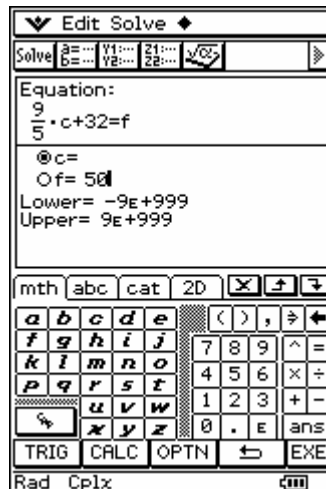
Entering an Equation

- Tap  and then 
- Tap in the box below Equation:
- Press the  key
- Tap **math** and then **VAR**
- Input the equation: $9/5c + 32 = f$
- Press 




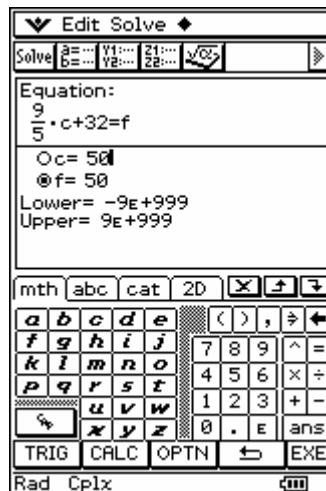
Solve for c when $f = 50^\circ$

- Input **50** for f
- Make sure c 's **radio button is selected**
- Tap  on the **toolbar**
- Tap **OK** to the dialog that opens






Solve for f when $c = 50^\circ$

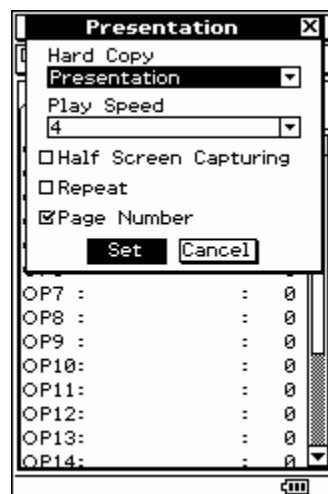
- Input **50** for c
- Make sure f 's **radio button is selected**
- Tap  on the **toolbar**
- Tap **OK** to the dialog that opens







Using the Presentation Application

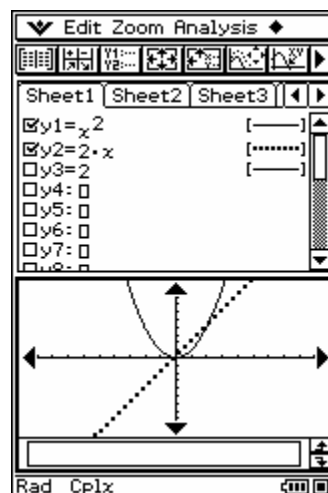
Setting Up Presentation

- Tap  and then  Presentati...
- Open the  menu
- Select **Settings** ► **Setup** ► and then **Presentation**
- Set Hard Copy to **Presentation**
- Tap **Set**







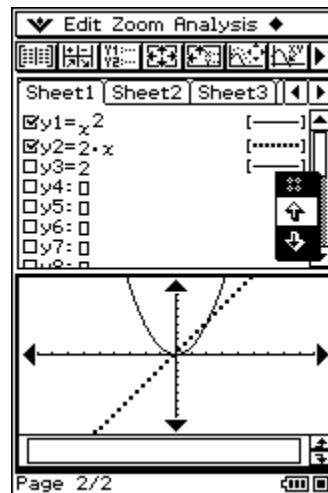
Creating a Presentation

- Tap following **P1** and input a name (up to 8 bytes)
- Press **(EXE)**
- Tap  (notice 0 changed to 1)
- Tap  and then  Graph&Tab...
- Graph a function
- Tap  to store the picture in your presentation






Showing a Presentation

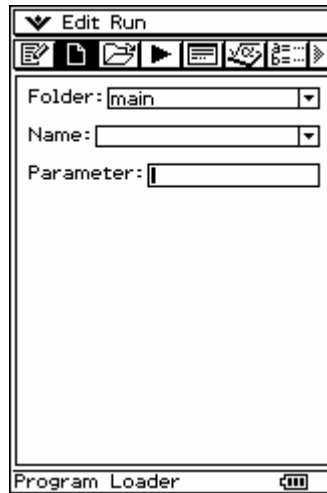
- Tap  and then  Presentati...
- Tap  on the toolbar to see your presentation play automatically
- Tap  to present one page (hardcopy) at a time
- *You can save up to 60 pages per presentation



Using the Program Application

Naming a Program

- Tap  and then 
- Tap the  toolbar button
- Enter a name for your program
- Tap OK







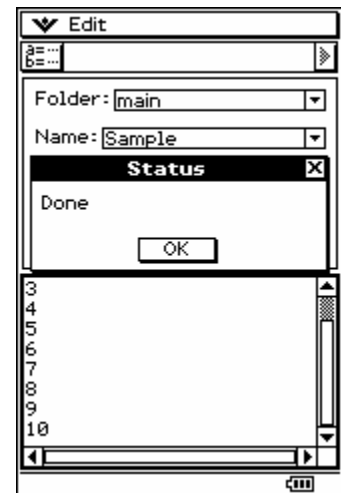
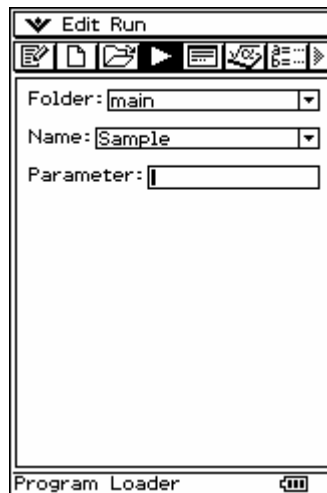
Entering Code

- Open the **Ctrl** menu
- Select **For** ► and then **For**
- Continue to use the **Ctrl** menu to input remaining code for the loop
- You will find **Print** in the **I/O** menu under **Output**



Running your Program





- Tap the  toolbar button
- Tap the  toolbar button
- Tap the  toolbar button
- Tap OK
- Tap in the upper window and select  to edit your program

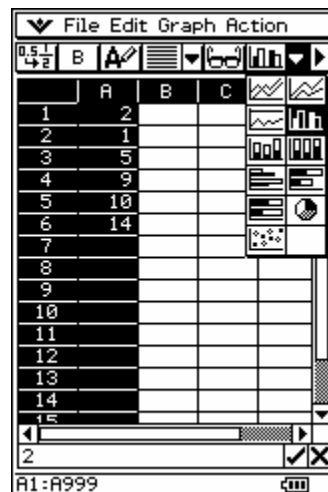
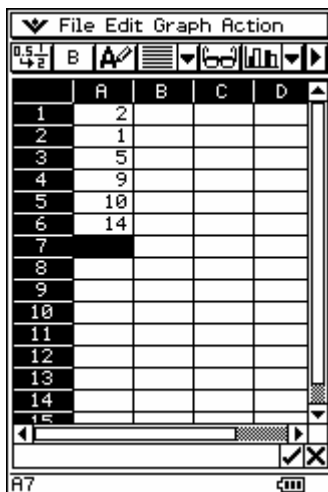


Using the Spreadsheet Add-In Application

**Spreadsheet is a new Application for Version 2

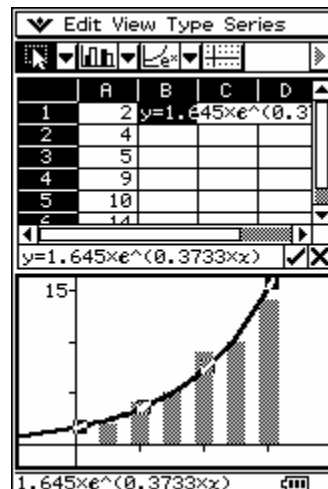
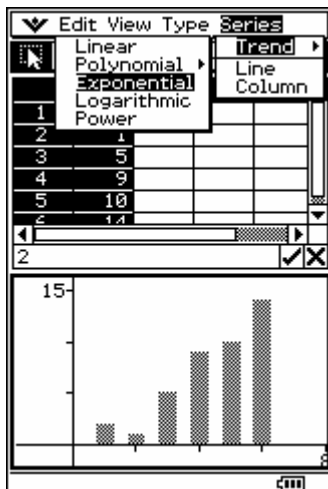
Entering and Graphing Data

- Tap  and then 
- Tap in cell **A1**
- Input the data shown pressing **EXE** after each entry
- Tap the **column heading** for column **A** to select it
- Tap the  arrow and select 
- Or, you can open the Graph menu and select Column/Clustered





Drawing a Regression

- Open the **Series** menu
- Select **Trend / Exponential**
- Change cell **A2** from 1 to 4 and press **EXE** (the regression curve updates automatically)
- Tap on the regression curve to select it
- Press on the curve near point (0,0) and drag to cell **B1**



Summing Data

- Tap in cell **B2** and then tap 
- Tap in cell **A7**
- Open the **Action** menu and select **sum**
- Tap on cell **A1** and **drag to cell A6** (notice the edit box updates)
- Press **EXE** (if you changed A2 to 4, cell A7 should now show 44)
- Tap on cell **A7** and then tap  to view **A7's** value and formula!

