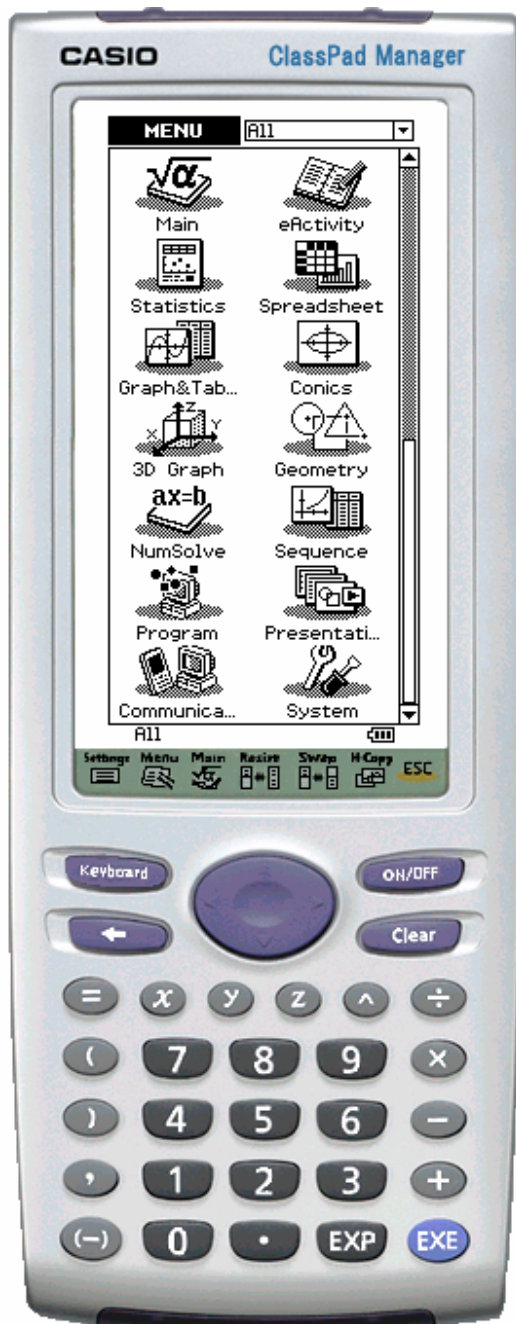# The CASIO ClassPad and Examples

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 slideshow.

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.
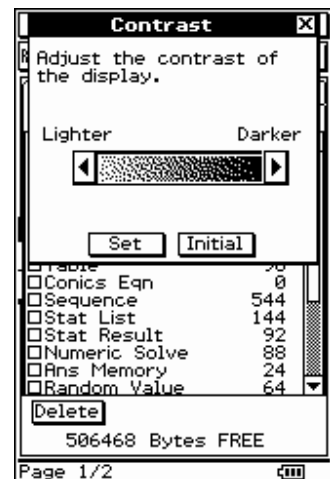
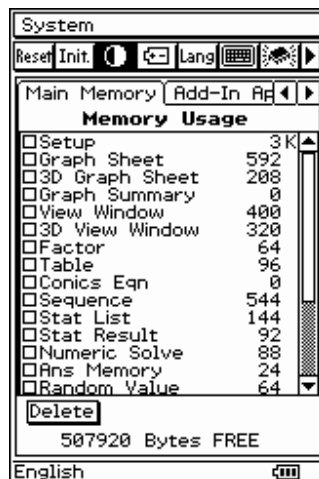## Setting the Result Type

- Tap **Menu** 📖 and then **Main** √α

- 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**
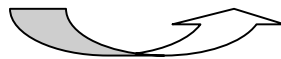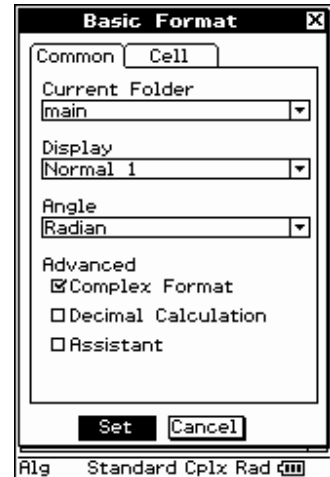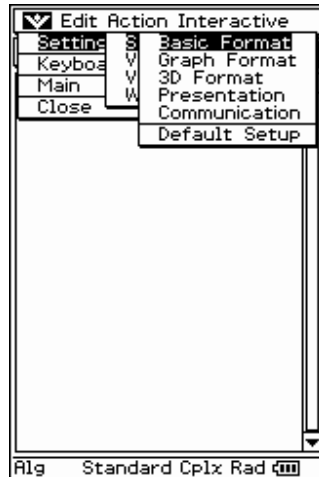
Setting Contrast

*Handheld ClassPad 300 Only

- Tap **Menu** 📖 and then System 🔧

- Tap ◑ (on the toolbar)

- Adjust the contrast

- Select **Set**

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2

Using the Main Application

Creating a Sequence

- Tap **Menu** 📖 and then **Main** ⬟
- 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}
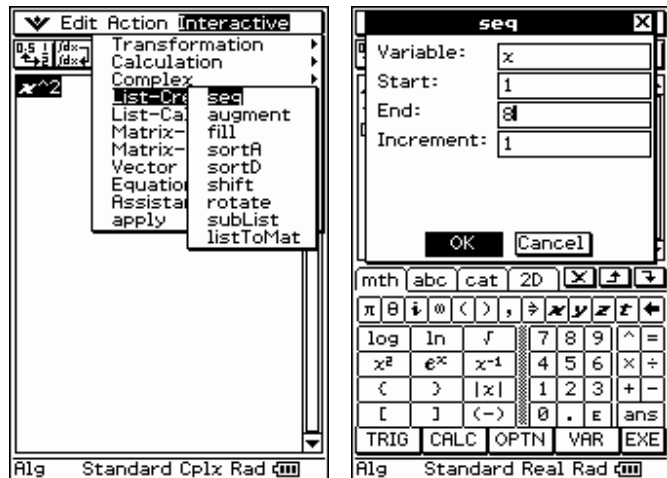
Using 2D Math

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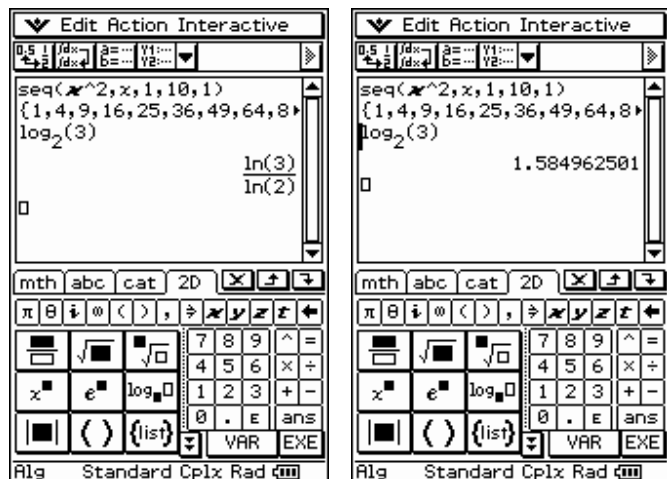
Editing Data

- 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
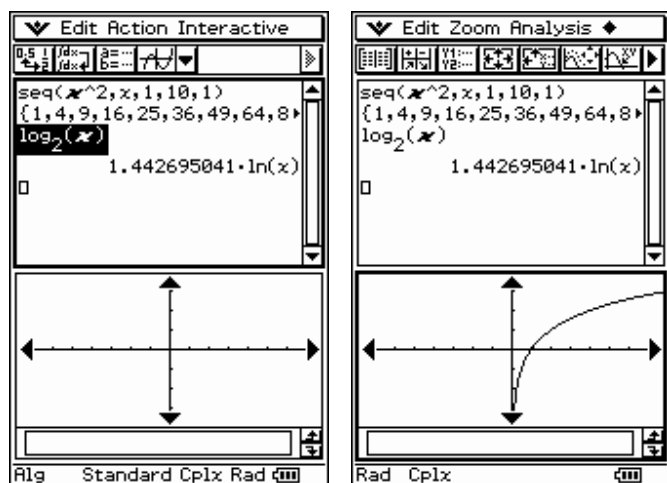
# Using the Main Application (continued)

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**

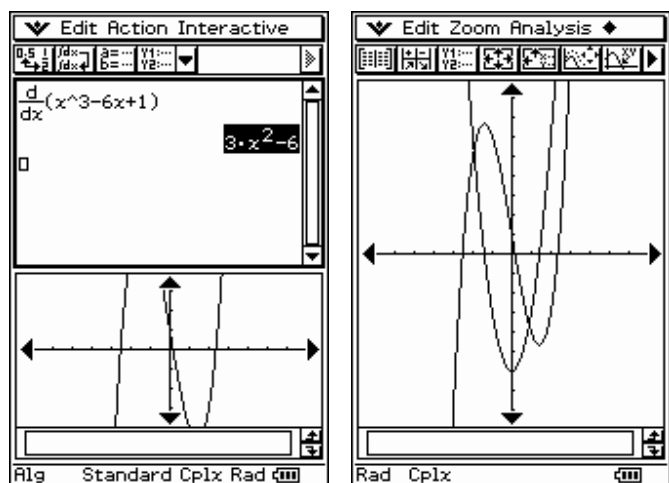- Select **OK** and then **tap** in the **Main** application window again
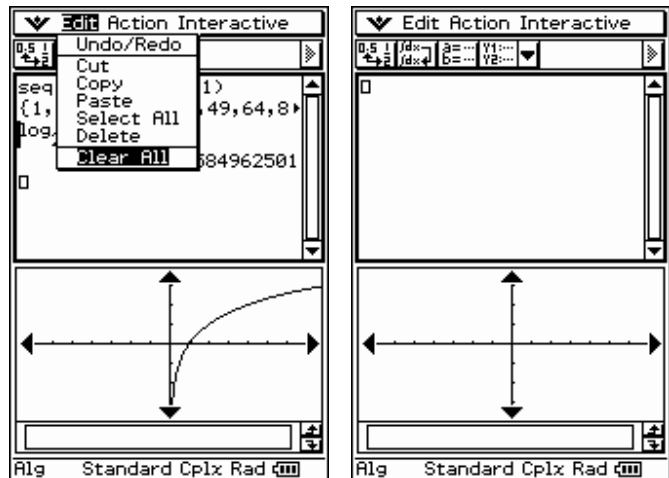
More 2D Math

- Press the (Keyboard) key

- Tap the **2D** tab and then ⏷

- Select the **2D derivative** symbol

- **Tap** the ⓧ key

- **Press** the right cursor key ⊕

- Input x^3 - 6x +1 and press (EXE)

- Press the (Keyboard) key again
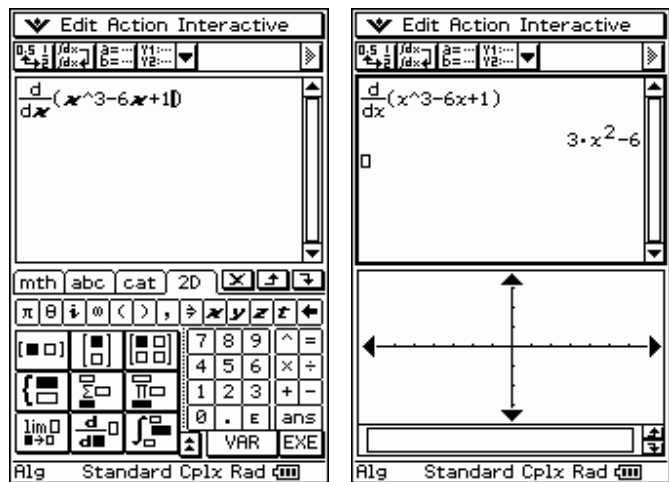
More Graphing within Main

- **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)

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4

Using other Applications within eActivity

Drawing an Implicit Function

- Tap **Menu** ⬛ and then ⬛ (eActivity)

- 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**
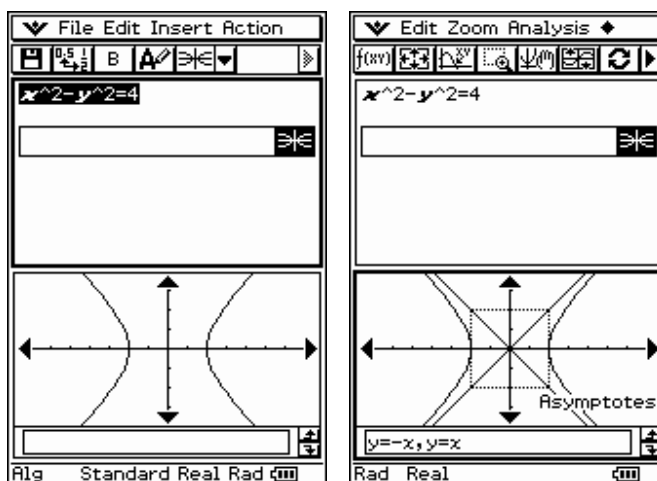
Shifting a Function

- 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 ⒺⓍⒺ

- **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

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5
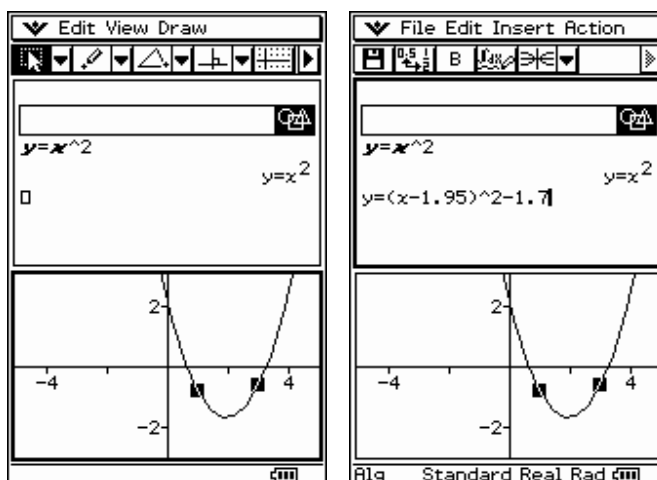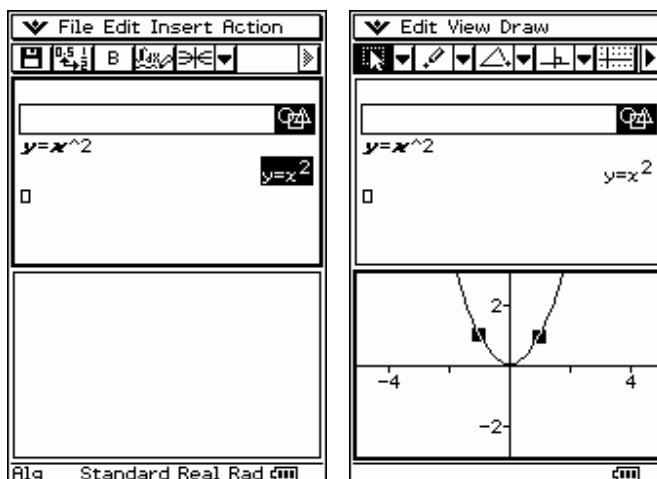
Using Geometry Link within eActivity

Inserting a Geometry Link

- Tap **Menu** 📖 and then 📖 eActivity (if needed)

- Select **Edit** and then **Clear All**

- Open the **Insert menu** and select **Geometry**

- Tap below the Geometry strip that you just inserted

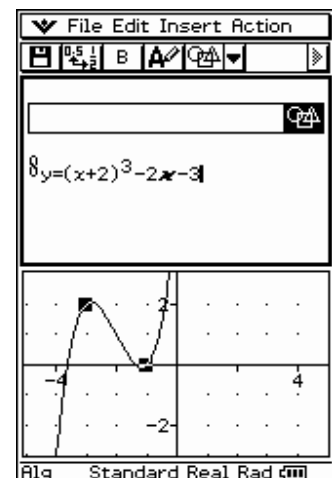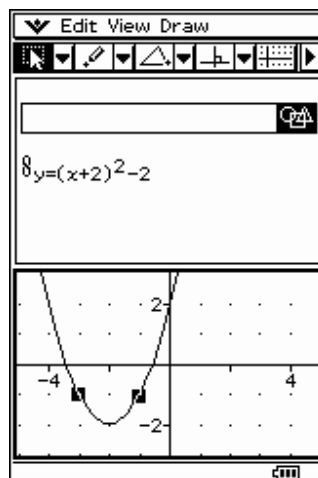- Open the **Insert menu** and select **Geometry Link**
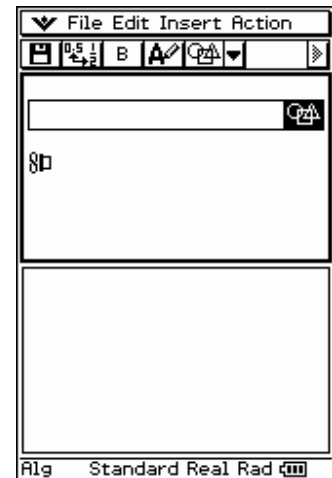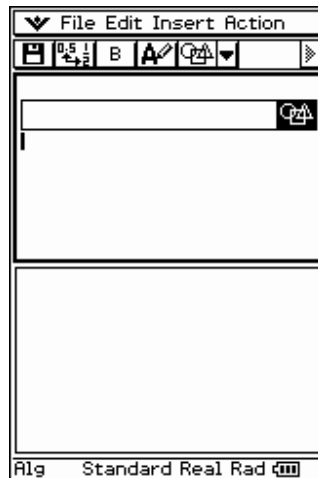
Linking an Equation to Geometry

- 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**
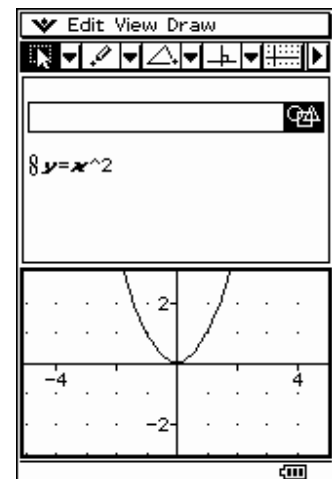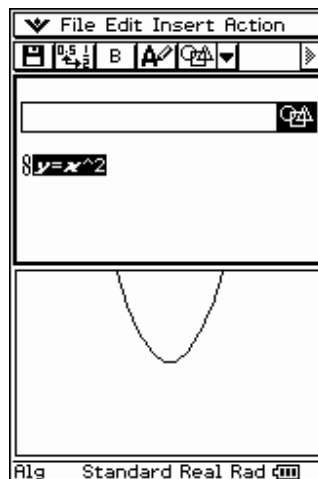
Exploring with the Geometry Link

- **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 (EXE) (notice the graph updated)

- Try linking and exploring other equations, such as $y=\sin(x)$

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6

Using Verify within eActivity
****Verify is a new Application for Version 2**

Inserting a Verify Window

- Tap ☒ (**Menu**) and then 📖 (if needed)

- Select **Edit** and then **Clear All**

- Open the **Insert menu** and select **Verify**

- Or, you can select Verify's button ($f(x)=$) from the dropdown button palette

- You will also find Verify's button in the Main application's dropdown button palette
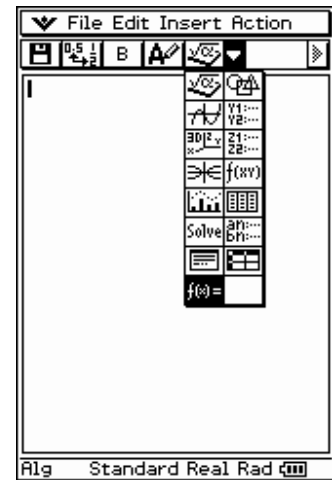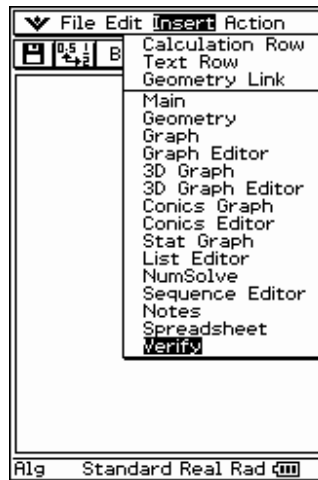
Using Verify to Assist in Factoring ☺

- **Tap** in the **top box**

- **Type** in **45** and **press** (EXE)

- To see what happens, type **8⊗5** in the next box and press (EXE)

- Tap **OK** and change **8⊗5** to **9⊗5** and press (EXE)

- In the next box, type in **3⊗3⊗5** and press (EXE)
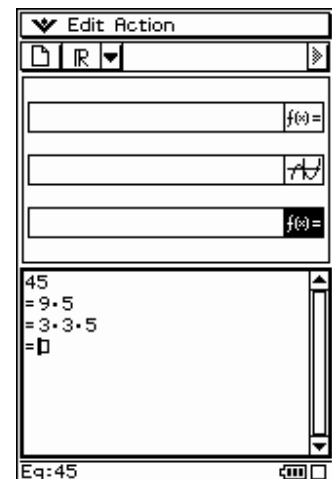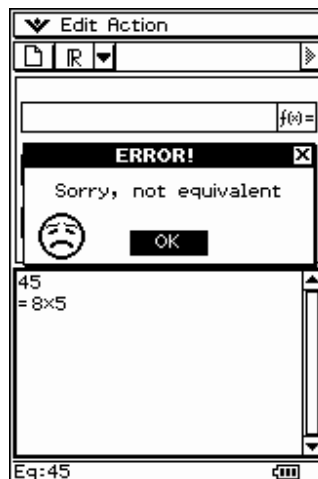
Using Verify to Assist in Algebra

- **Tap** the ☐ **button** and select **OK**

- Type in **5x^2 +20** and press (EXE)

- Next, type in **5(x^2 +4)** and press (EXE)

- **Tap** the **down arrow** (▼) on the toolbar and **select the** ℂ.

- Next, type in **5(x+2i)(x-2i)** and press (EXE)

- Thumbs up for complex numbers!

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7
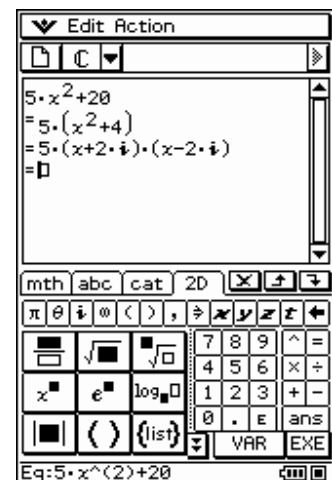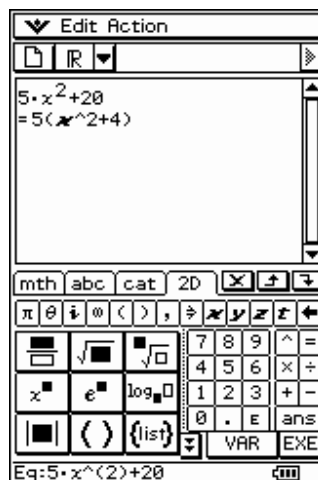
Using the Statistics Application

Entering Data

- Tap **Menu** and then **Statistics**

- If needed, open the **Edit menu** and select **Clear All**

- Tap below list1

- **Input data** and press ⒠ after each input

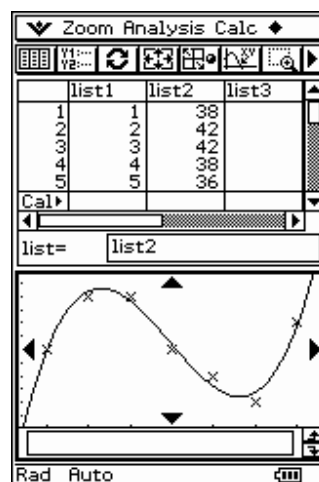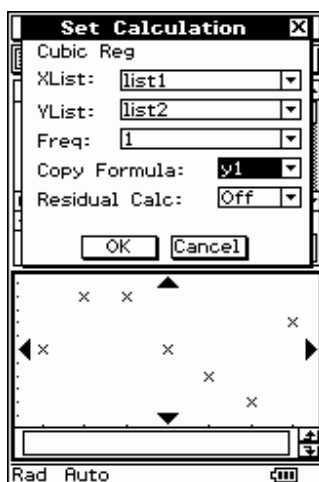- *Data is the low temperature predicted for 12/21/03 – 12/27/03 in Portland, Oregon
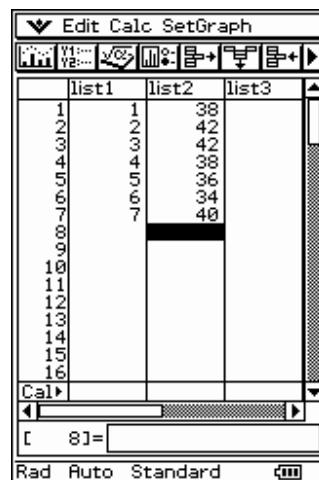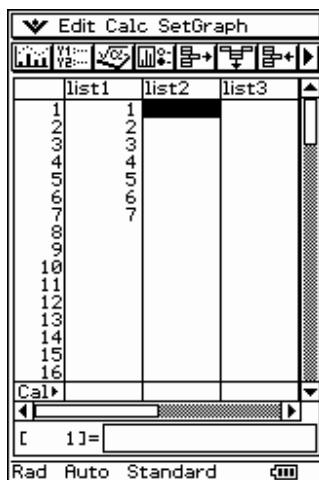
Setting Stat Options

- Open the **SetGraph menu**

- Select **Settings…**

- Setup **StatGraph1**

- Tap **Set**
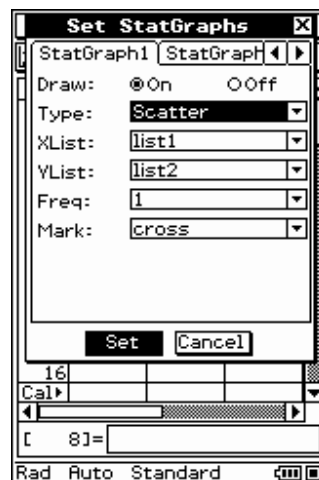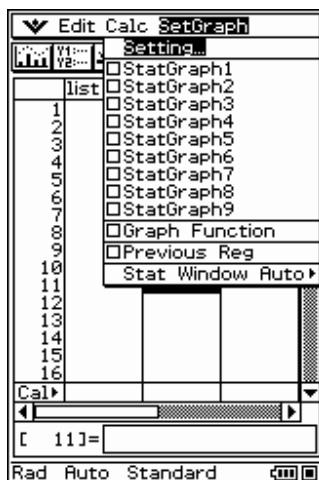
Graphing Data & Regressions

- 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

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8

Using the Graph & Table Application

Graphing

- Tap **Menu** ![Menu icon] and then **Graph&Tab...** ![Graph&Table icon]

- Tap in the box following **y1**

- Input $\textcircled{x}\textcircled{\wedge}\textcircled{2}$ and press $\textcircled{EXE}$

- Tap $\boxed{\blacktriangledown}$ on the toolbar and **select** $\boxed{x=}$

- Input $\textcircled{y}\textcircled{\wedge}\textcircled{2}$ and press $\textcircled{EXE}$

- Tap ![graph icon] to view your graphs (first icon on toolbar)
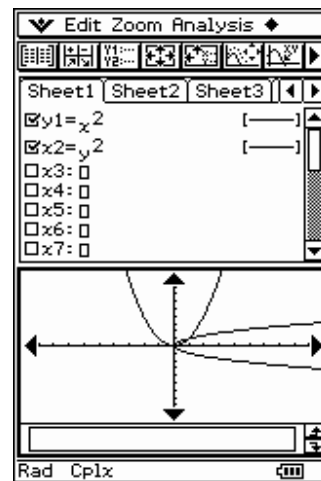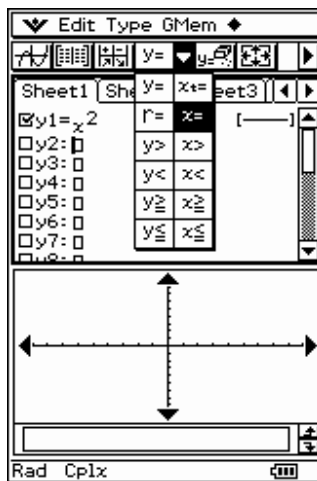
Line Style

- Tap [-----] to the right of **y1=**x^2

- Tap a different line style and then **OK**

- Tap ![graph icon] to view your graphs
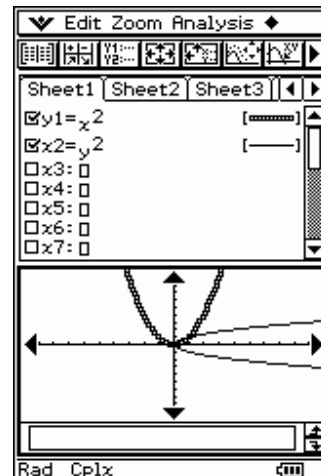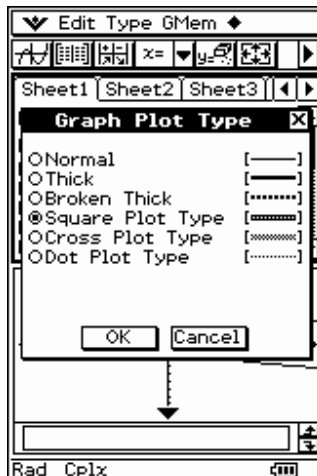
Inequalities and Shading

- Tap the = sign following *x2*

- Select *x*>**Type** then **OK**

- Tap ![graph icon] to view your graphs

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9
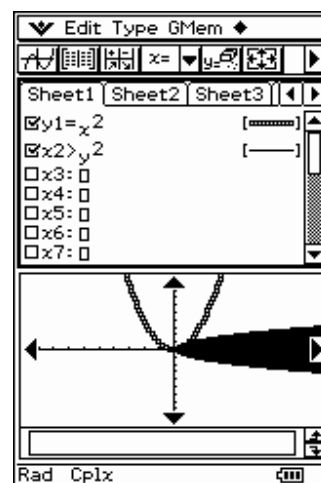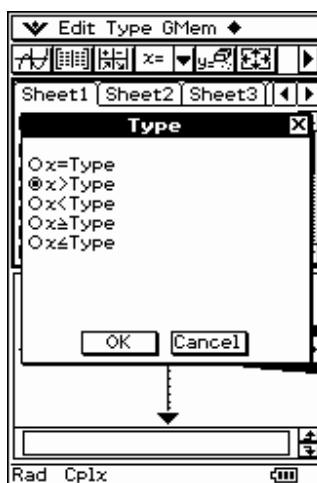
Using the Sequence Application

Entering a Sequence

- Tap **Menu** ![book icon] and then ![Sequence icon]

- 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}

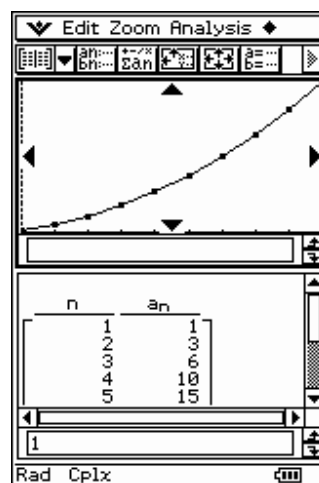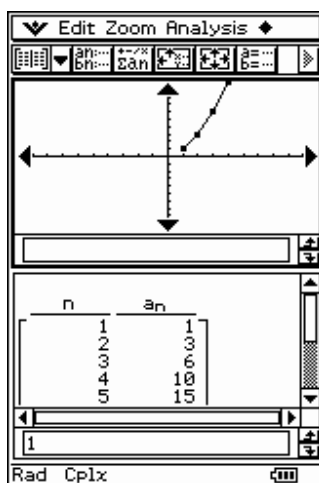- Input **1** for a_1

- **Check the box** in front of a_{n+1}
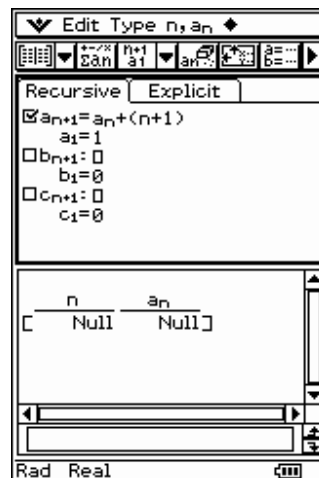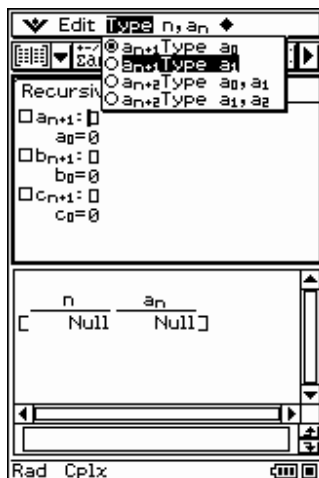
Creating a Table of Values

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

- Tap the ![toolbar] toolbar button
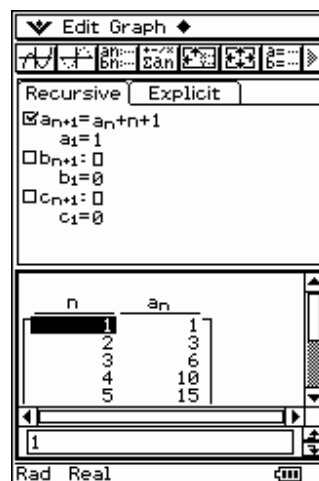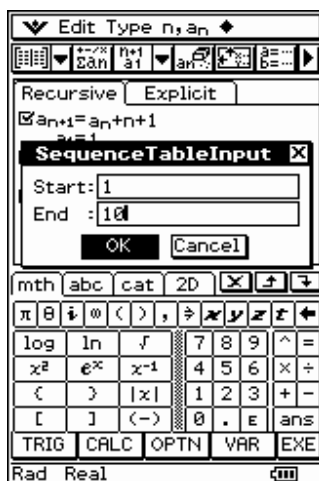
Plotting a Table of Values

- Tap in the **Table window**

- Tap the ![toolbar] toolbar button

- Open the **Zoom menu** and select **Auto**

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10

Using the Conics Application

Graphing

- Tap ![Menu] and then ![Conics]

- Tap in the **box** below "Conics Equation:"

- Input $x^2-2x-y^2=4$

- Press (EXE)

- Tap ![toolbar icon] on the toolbar

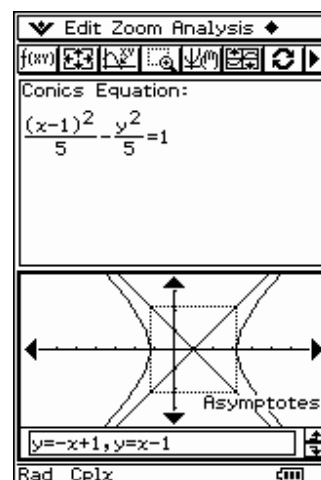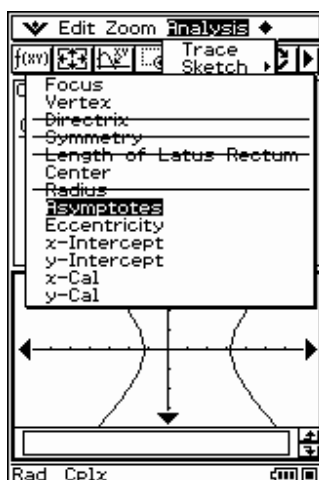- Open the **Zoom menu** and select **Quick Standard** (if needed)
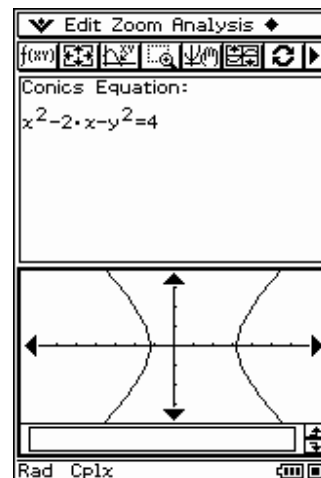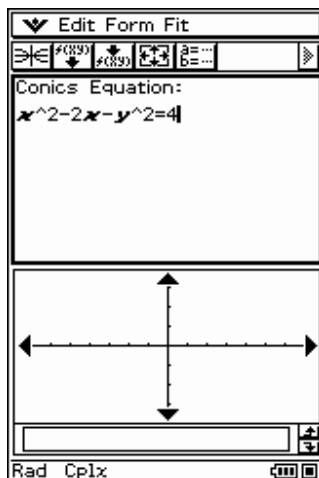
Fitting into a Form

- **Tap** in the **Conics Equation window**

- Open the **Fit menu** and select **Fit into Conics Form**

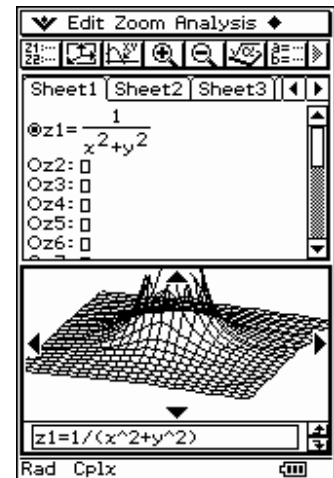- Select the correct form

- Tap **OK**
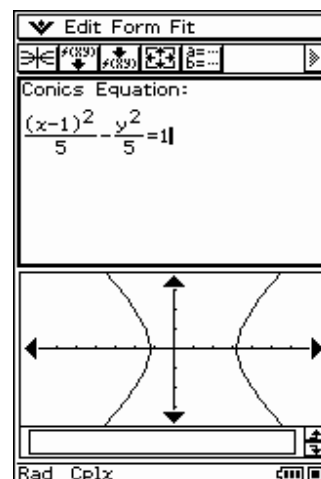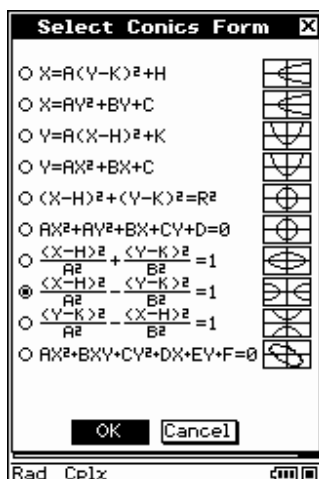
Drawing Asymptotes

- **Tap** in the **Graph window**

- Open the **Analysis menu** and select **G-Solve ▶**

- Select **Asymptotes** from the list

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11

Using the 3D Graph Application

Graphing

- Tap **Menu** and then (3D Graph icon)
- Tap in the **box** following **z1**
- Input: $1/(x{\char`\^}2+y{\char`\^}2)$
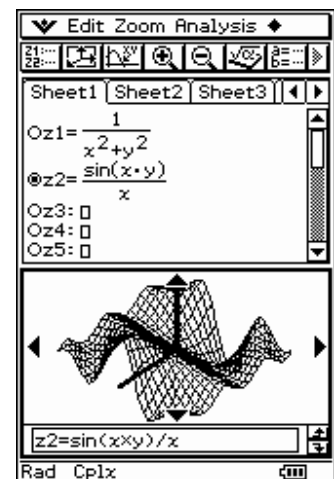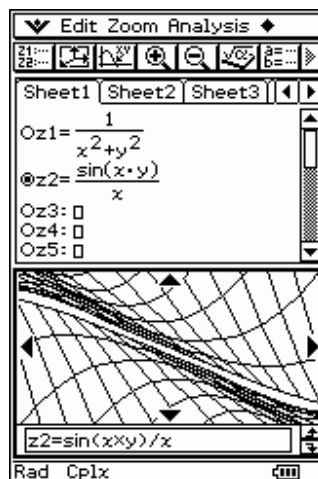- Press (EXE)
- Tap (3D icon) on the toolbar

Another Graph

- Tap in the **box** following **z2**
- Press the (Keyboard) key
- Tap **2D** and select (fraction icon) (fraction)
- Tap the **mth** tab and then **TRIG**
- Tap **sin** and then input (x)(y)())
- Tap the down cursor key
- Input (x) and press (EXE)
- Tap (3D icon) on the toolbar
- Open the ◆ **menu**
- Select **Rotating** ▶ then **Left→Right**
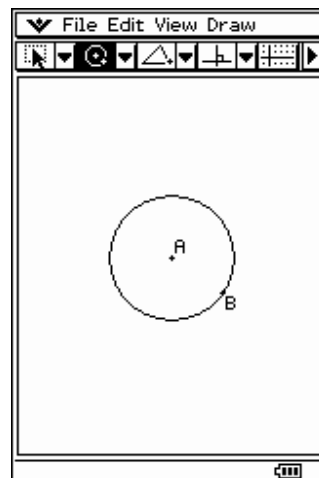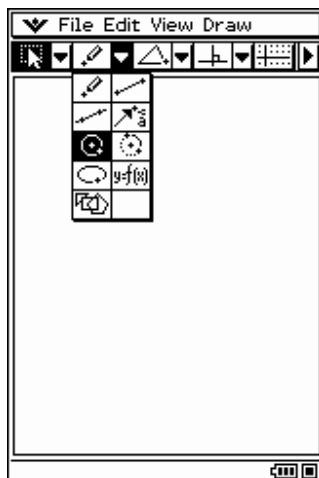
  (tap ESC to stop early)
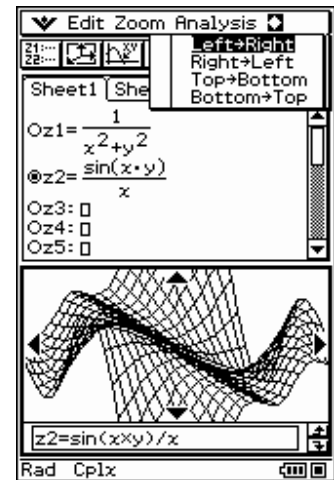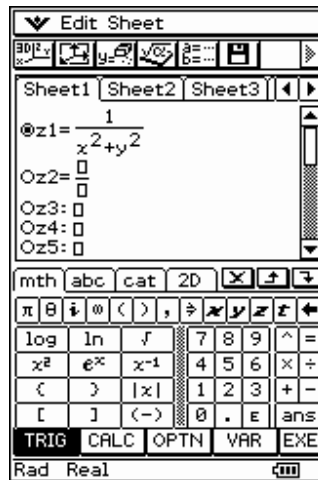
Hot Keys

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

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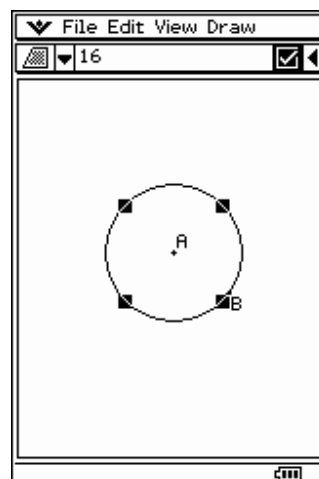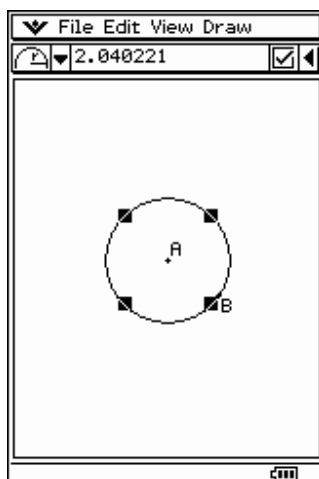
12

Using the Geometry Application

Drawing a Circle

Menu

- Tap 📖 and then 📐 Geometry

- Tap the 2nd ▼ and select the **circle** icon

- Tap to create the **center point**
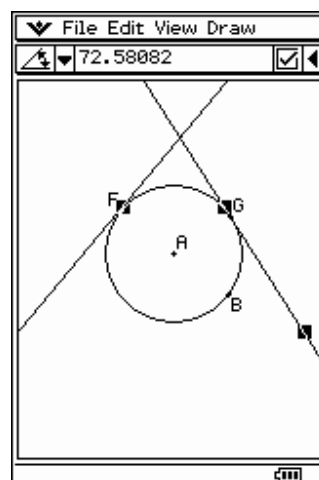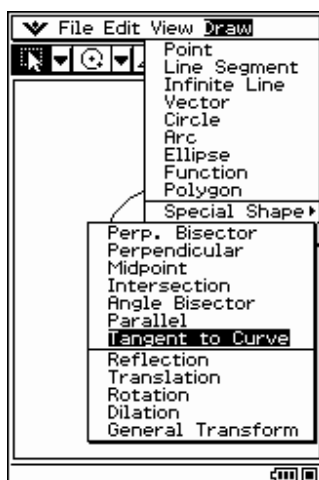
- Tap **another spot** and drag

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

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13

Using the NumSolve Application

Entering an Equation

- Tap **Menu** [icon] and then **ax=b** NumSolve [icon]

- Tap in the box below Equation:

- Press the (Keyboard) key

- Tap **mth** and then **VAR**
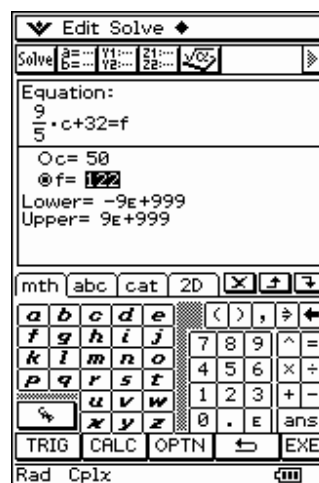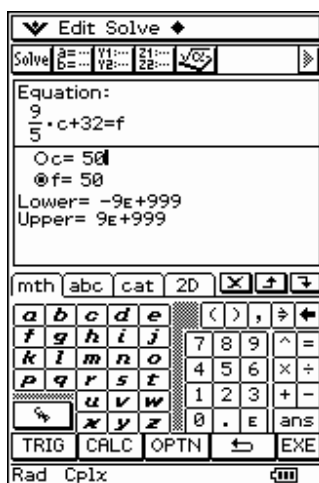
- Input the equation: $9/5c + 32 = f$

- Press (EXE)
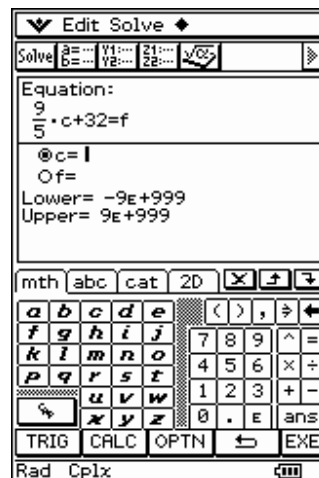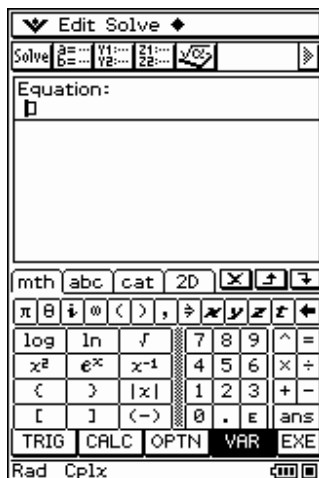
Solve for c when $f = 50^{\circ}$

- Input **50** for f

- Make sure **c's radio button is selected**

- Tap Solve on the **toolbar**

- Tap **OK** to the dialog that opens
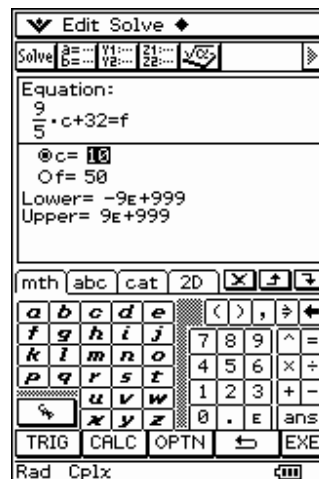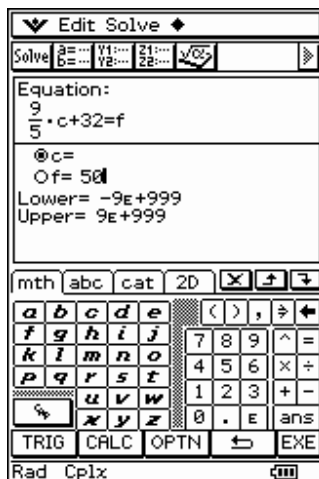
Solve for f when $c = 50^{\circ}$

- Input **50** for c

- Make sure **f's radio button is selected**

- Tap Solve on the **toolbar**

- Tap **OK** to the dialog that opens

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14

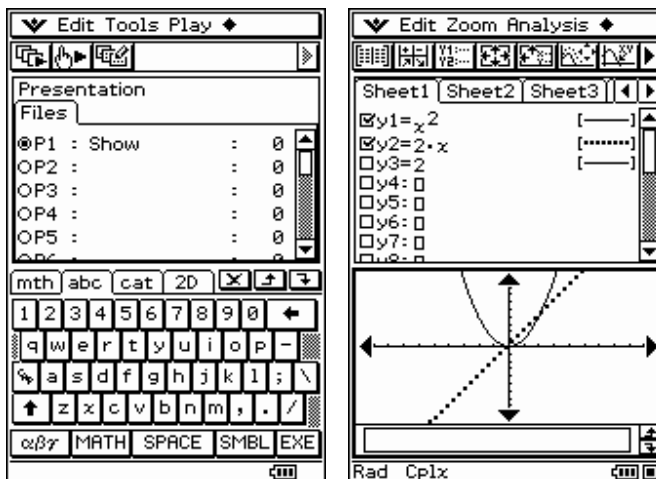# Using the Presentation Application

Setting Up Presentation

- Tap 📖 **Menu** and then 🗇 **Presentati...**

- Open the 🔻 menu

- Select **Settings ► Setup ►** and then **Presentation**

- Set Hard Copy to **Presentation**

- Tap **Set**
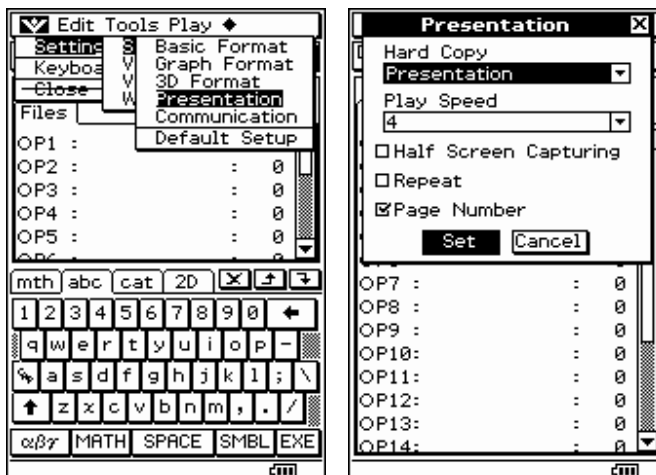
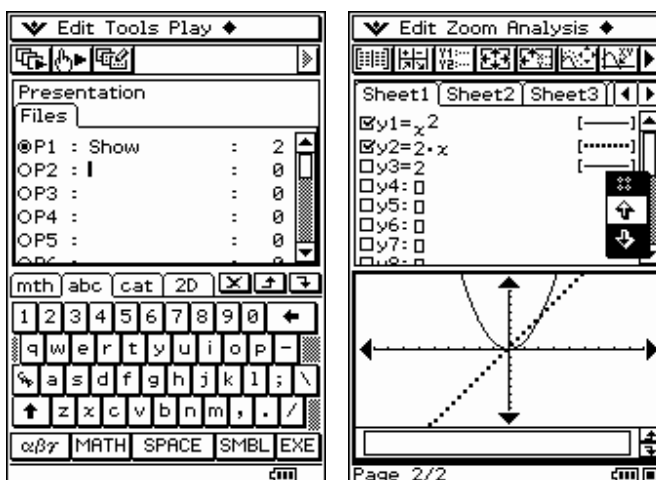**Creating a Presentation**

- Tap following **P1** and input a name (up to 8 bytes)

- Press (EXE)

- Tap 🗇 **H-Copy** (notice 0 changed to 1)

- Tap 📖 **Menu** and then 🗇 **Graph&Tab...**

- Graph a function

- Tap 🗇 **H-Copy** to store the picture in your presentation

**Showing a Presentation**

- Tap 📖 **Menu** 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

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15

Using the Program Application

Naming a Program

- Tap **Menu** 📖 and then ⌨ Program
- Tap the ⬜ toolbar button
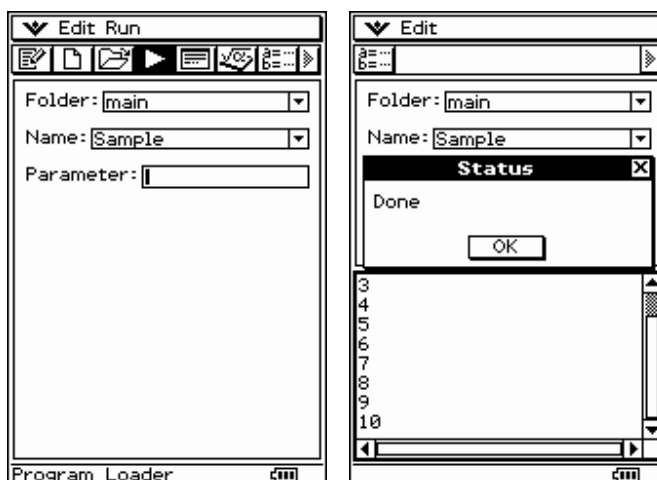- Enter a name for your program
- Tap **OK**
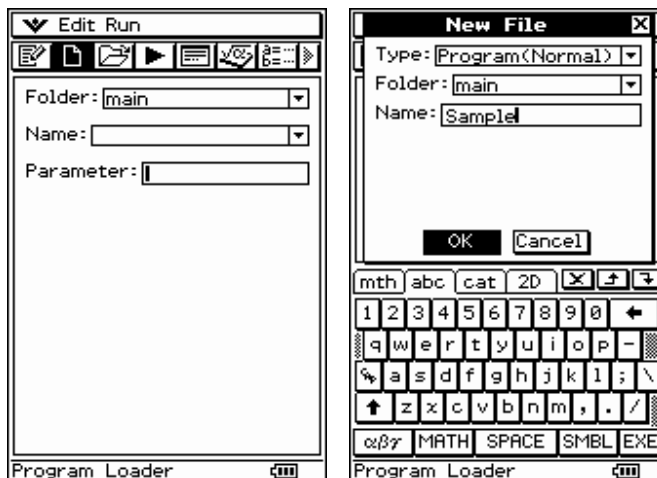
Entering Code

- 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**
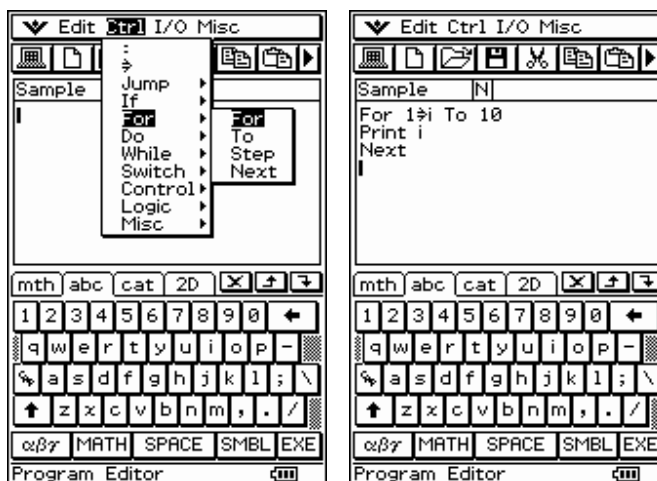
## Running your Program

- 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

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16

Using the Spreadsheet Add-In Application
**Spreadsheet is a new Application for Version 2

Entering and Graphing Data

- Tap **Menu** 📖 and then **Spreadsheet** ▦

- 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
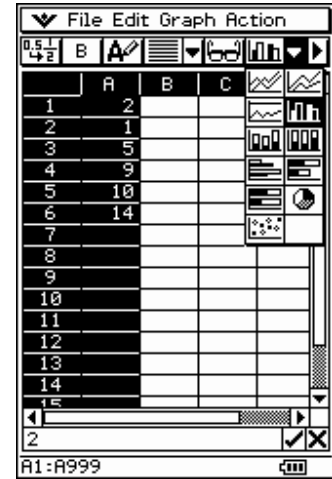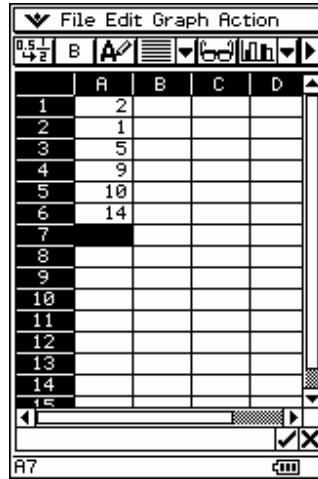
Drawing a Regression

- 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**
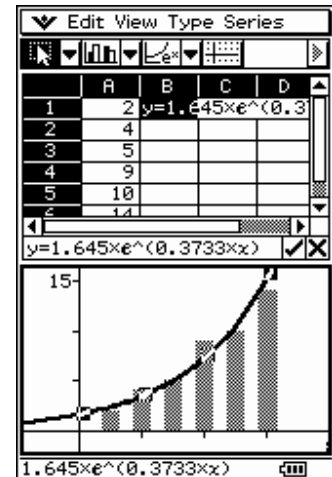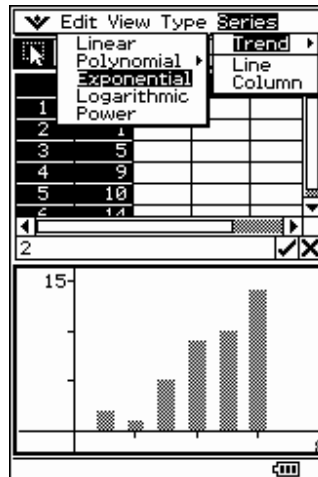
Summing Data

- Tap in cell **B2** and then tap **Resize** ▦↔▦

- 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!