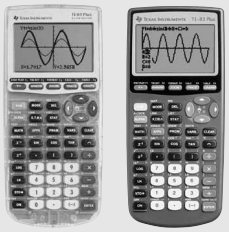
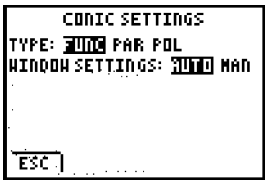
TI Apps Demonstration:

Conic Graphing App

For the TI-83 Plus and TI-83 Plus Silver Edition

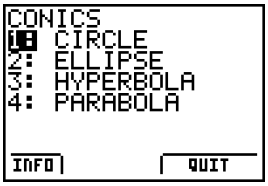


The Conic Graphing Application provides enhanced conics functions to the already powerful TI-83 Plus. Graph or trace circles, ellipses, hyperbolas, and parabolas and solve for the conic's characteristics. Present equations in function, parametric, or polar form.



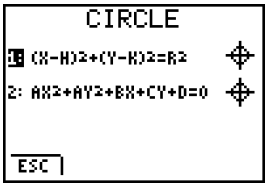
1

Select the App by pressing the APPS key and selecting *Conics*. If the App does not behave like this script, then press MODE and ensure the window setting is "AUTO".



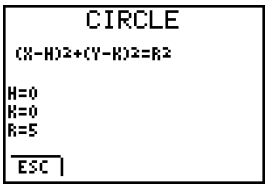
2

At the main menu, select from the four conic types. The main menu allows you to use the ENTER key, number keys, or soft keys (Y= for INFO, or TRACE and GRAPH for QUIT). Press the INFO soft key and the splash screen will appear for a few seconds.



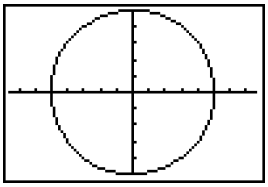
3

Circle In Function (X,Y) Form
Press ÷ or ◊ to select circle. Here are the two equations for circle in the XY form. Select Equation 1 by pressing ◊.



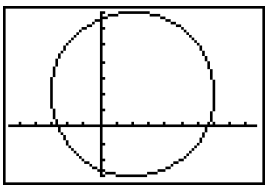
4

Enter *H=0, K=0, and R=5*.
Press GRAPH.



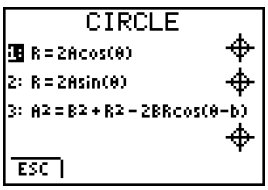
5

The circle is displayed. Press the OFF key to go back. Press TRACE to show the points along the curve.



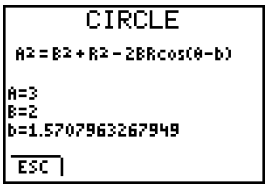
6

Change the H value to 2 and the K value to 2. Press the GRAPH key. Note that the center of the circle is now at 2,2. Press the OFF key, then É SOLVE (above ENTER) to show the new center.



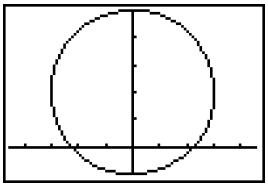
7

Circle In Polar Form. Press 3 and change the *CONIC SETTINGS TYPE* to *"POL"* Press the ESC soft key. If the equation screen of the circle is visible, the polar equations will now be displayed.



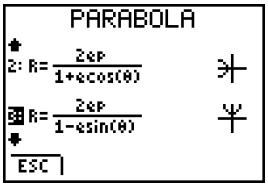
8

Note that the B and b are the polar form of the offsets. Select equation 3 and enter A=3, B=2, and b=p/2. Note that p/2 is evaluated. Different functions are evaluated in this screen. For example, enter *B=2*sin(p/2)*. This results in the value 2.



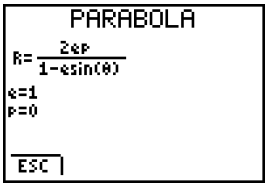
9

Press GRAPH. Then press TRACE to show the points along the curve and note the different coordinate system used. To continue with the circle, press CLEAR and change values. Using the ESC soft key, go back to a different equation or change the mode to parametric.



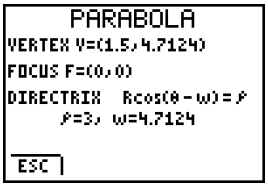
10

Parabola In Polar Form. From the circle, press the ESC soft key to return to the main menu. Press 2nd and the parabola equations appear. Since the handheld is in polar mode, there are 4 different polar equations for the parabola. Use the C and D keys to scroll to choose one. Select equation 3 (Press or highlight ∏).



11

Fix the eccentricity of the parabola to 1. Change the P value to be 1.5 and press the É SOLVE key.



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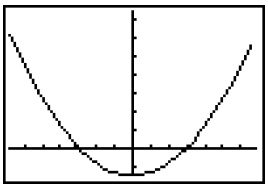
Here, the solutions to parabola specific terms are shown in polar form and also reflect radian mode. Exit the App and change the mode setting to degrees, re-enter the App and show the difference. The App does retain the last value for P on exit.Press the s key.



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The graph is displayed. Press the TRACE key and use the arrows to move along the curve.