

**Objectives:**

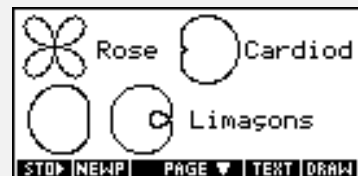
Using the **POLAR EQUATION PLOT** applet, the student will graph polar equations and will be able to analyze these symbolically and graphically.

**Functionality:**

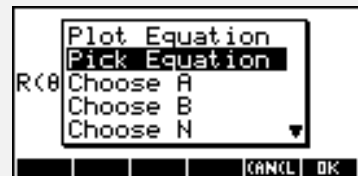
When the student presses **START**, the **POLAR EQUATIONS PLOT NOTE** will be displayed.



After reading the note, the student should look at the **SKETCH** for further explanation.



**VIEWS** allows the student to pick an equation to be explored, adjust the parameters A, B, and N, and to plot the equation.



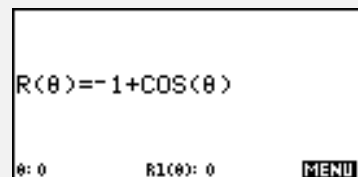
**Pick Equation** will prompt the student to select  $y = A + B \cos(N\theta)$  or  $y = A + B \sin(N\theta)$ .



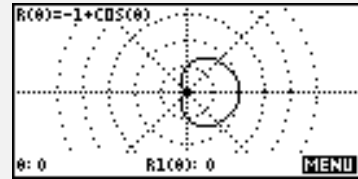
**Choose A**, **Choose B**, **Choose N**, will prompt the student to adjust a parameter.



When a parameter has been adjusted, the equation will automatically be updated and displayed.

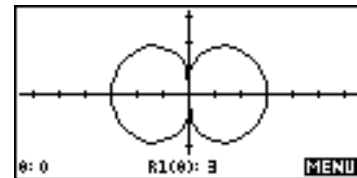
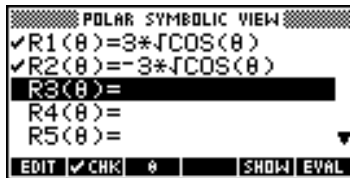


**Plot Equation** will graph the adjusted polar equation on a polar grid. The updated equation will be displayed in the top left corner of the screen.



**Additional Exploration:**

Use the **Polar** applet to graph a lemniscate. An example would be:  
Plot the polar equation  $r^2 = 9 \cos \theta$ .



Ideas can be applied to:

Trigonometry, Precalculus, Calculus

Programs associated with this applet:

.PEP.PP, .PEP.CE, .PEP.CA, .PEP.CB, .PEP.CN, .PEP.ST, .PEP.SV