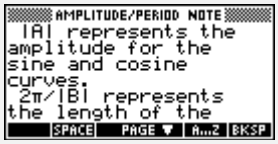
Exploring Amplitude and Period — For the Teacher

Objectives:

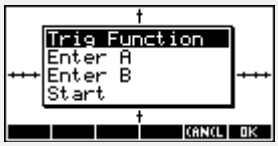
Using the **AMPLITUDE/PERIOD** aplet, the student will investigate parameters A & B to see how they effect the functions **y = Arcsin(Bx)**, **y = Arccos(Bx)**, **y = Arctan(Bx)**, **y = Arcsec(Bx)**, **y = Arccsc(Bx)**, **y = Arccot(Bx)**.

Functionality:

When the student presses **START** , the **AMPLITUDE/PERIOD NOTE** will be displayed.

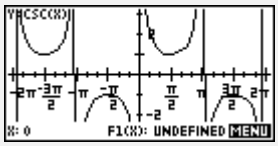


The student should press **VIEWS** to select the trigonometric function to be investigated, as well as to enter values for A and B.



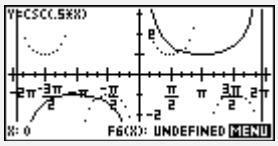
Use the up or down arrow to scroll through this menu. Press **OK** to select a specific trig function.

When the student presses **OK ,** a graph of the selected function, where A and B are defaulted to 1, will be plotted over the interval [-2π, 2π].



Selecting **Enter A** or **Enter B** prompts the student for a value. Note: If A is chosen to be investigated, B is automatically defaulted to 1 and vice versa.

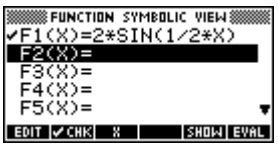
When this value is entered, the new function will automatically be plotted over the original function plot.

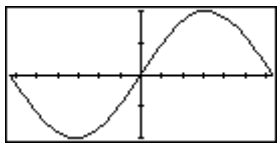


Additional Exploration:

Using the **Function** aplet, have the student adjust the **PLOT SETUP** so that exactly one period of the function fits into the window. An example would be:

Graph one period of $y = 2\sin(\frac{1}{2}x)$.





Programs associated with this aplet:

.AMP.A, .AMP.B, .AMP.TF, .AMP.SV