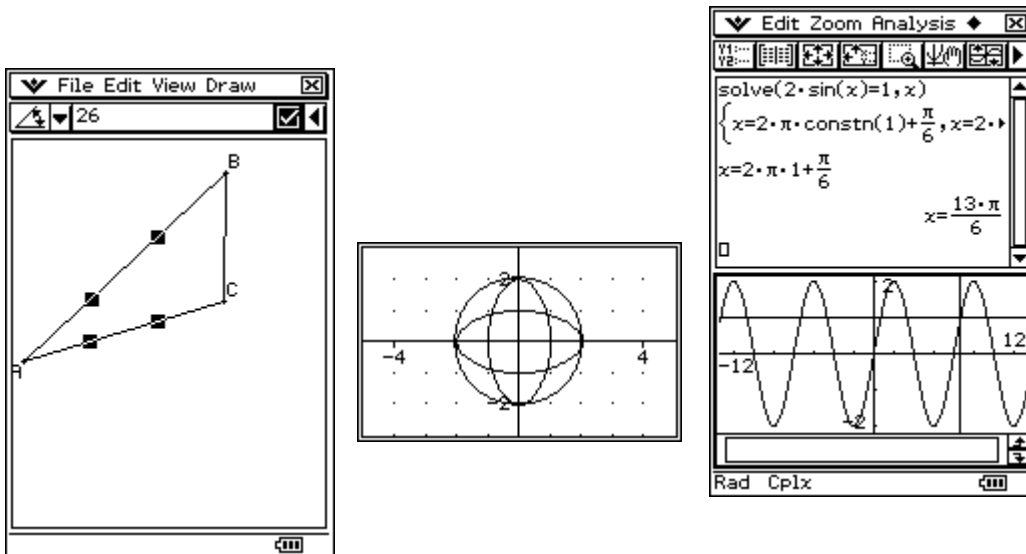


2011 WAMATYC

April 28-30, 2011
Skamania Lodge, WA

An Introduction to the ClassPad








Presented by Diane Whitfield
dwhitfield@casio.com

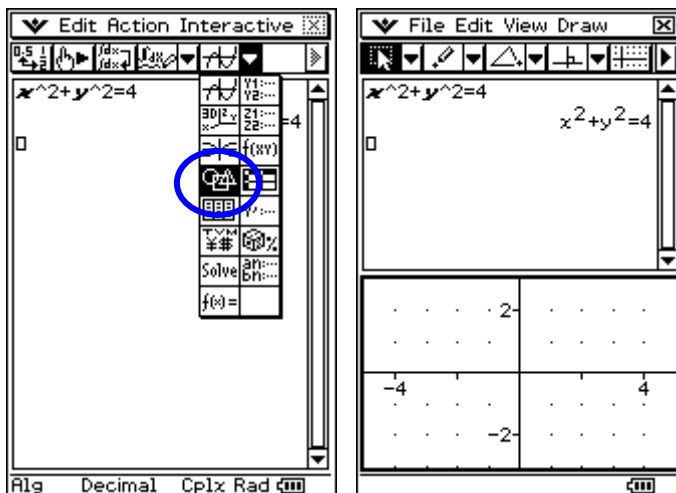
ClassPad 101 Online Course: www.classpad101.com

Activity I – Introducing Conic Sections with Drag & Drop


The ClassPad's drag and drop feature is a nice tool to use as part of a lecture or individually to try to understand how coefficients control a graph. The following exercise is similar to what I do when introducing conic sections.

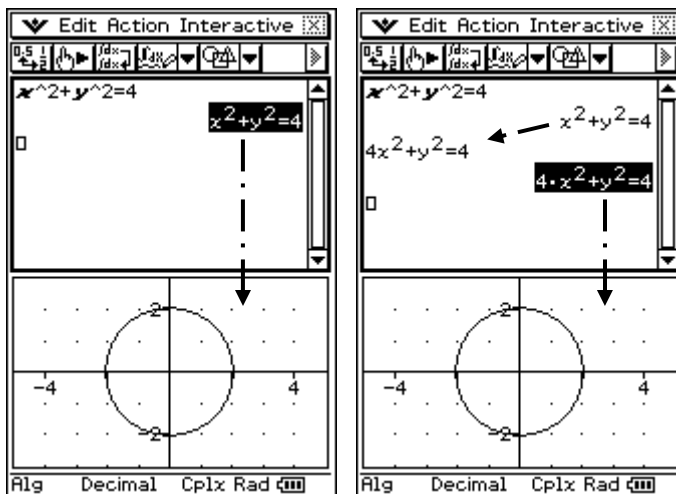
1. Getting started:

- Tap 
- Input: $x^2+y^2=4$
- Press  [lower rt corner]
- Tap the last  on the toolbar
- Select 
- Tap the  toolbar button 3 times



2. Drag & drop and editing:

- Tap $x^2+y^2=4$ to select it and let go
- Press on selection and drag to the Geometry window
- Great!!
- Tap on $x^2+y^2=4$ again
- Press on selection and drag to the next line
- Change the coefficient of either the x^2 or y^2 term
- Press 
- Tap result, let go, and then drag to the Geometry window

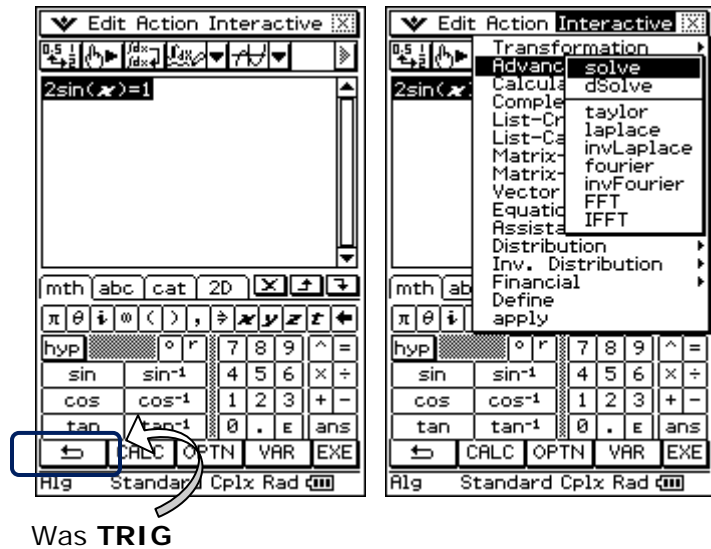


Activity II – Solving Equations containing Trig Algebraically and Graphically

1. Using the Solve command:

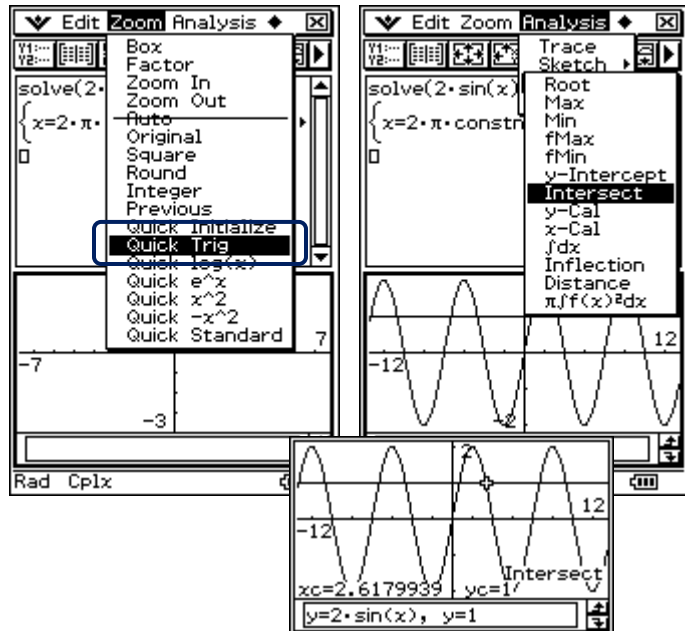
- Close Geometry
- Open the **Edit** menu
- Select **Clear All**
- Input: $2\sin(x)=1$

[Press **Keyboard** and then **TRIG** on the mth page]
- Drag over the equation to select it
- Open the **Interactive** menu
- Select **Advanced/Solve**
- Tap OK



2. Using the Graph application:




- Tap the last on the toolbar
- Select
- Open the **Zoom** menu
- Select **Quick Trig**
- Select just: $2\sin(x)$, let go
- Press on selection and drag to the Graph window
- Repeat for the other side of the equation
- Open the **Analysis** menu
- Select **G-Solve/Intersect**
- Use the cursor pad arrows to jump to each intersection

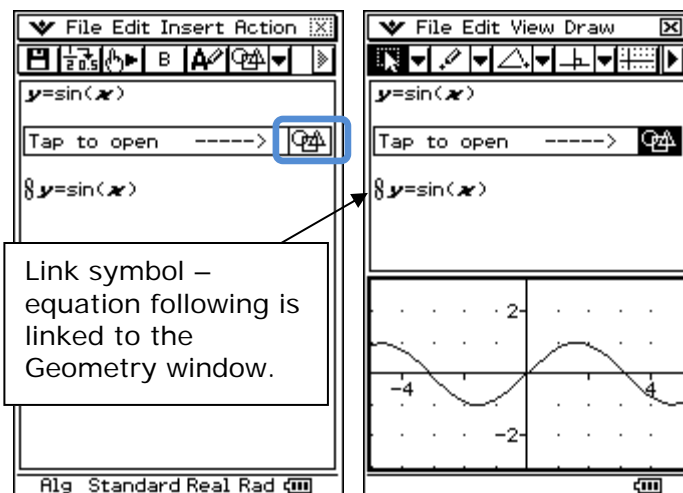


Activity III – Exploring the Period and Amplitude of a Trig Function

In this exercise, we will use a premade activity. The eActivity application is useful in saving time so that the student can focus on the math!

1. Getting started:

- Tap 
- Tap 
- Tap the  icon at the end of the strip



Possible exercises that you could have students do:

Exercise 1: Change the number in front of “x” to 2 different positive numbers larger than one. Press EXE after each change to update the graph.

Exercise 2: Change the number in front of “x” to 2 different positive numbers less than one. Press EXE after each change to update the graph.

What does the number in front of x control?

Exercise 3: Change the number in front of “sin” to a positive number larger than one and then less than one.

Exercise 4: Change the number in front of “sin” to a negative number. Press EXE after each change to update the graph.

What does the number in front of “sin” control?

What effect does making the number in front of “sin” negative have on the graph?

Exercise 5: Tap on your graph to select it. Press on one of the selection handles (black boxes) and drag the graph. Share your new graph and equation with your neighbor and explain the relationship to them.

Activity IV – Using Geometry to Visualize the Law of Sines

$$\text{Law of Sines: } \frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

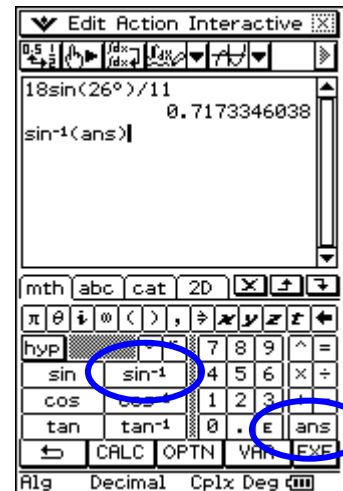
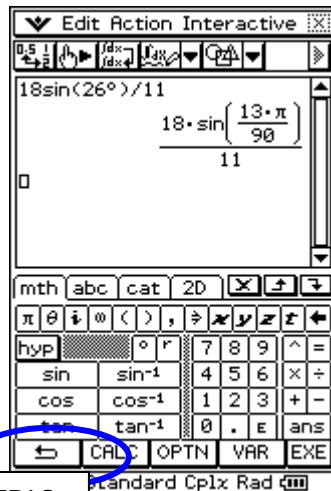
Exercise:

Given $\angle A = 26^\circ$, side $a = 11$ and side $b = 18$, sketch $\triangle ABC$. Is this the only possible triangle?

Use the Law of Sines and the ClassPad to find $\angle B$. Before beginning with the ClassPad, set up an equation and solve for the $\sin(B)$.

1. Input your expression for the $\sin(A)$ into the Main application

- Select **Edit/Clear All**
- Open the Keyboard
- Tap **TRIG** on the mth page
- Input expression
- Tap **EXE** – hmm...
- Tap status bar to change to **Decimal** and **Deg**
- Tap on input and press **EXE** again
- Find the arcsin of the result!






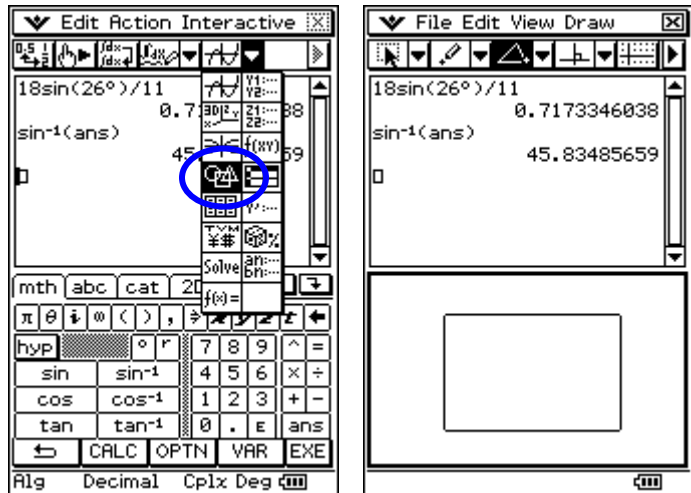
What is the measure of $\angle B$? _____

Sketch $\triangle ABC$ using the found information and the given information ($\angle A = 26^\circ$, side $a = 11$ and side $b = 18$). Does it look similar to your original sketch?


2. Using Geometry to visualize possible triangles

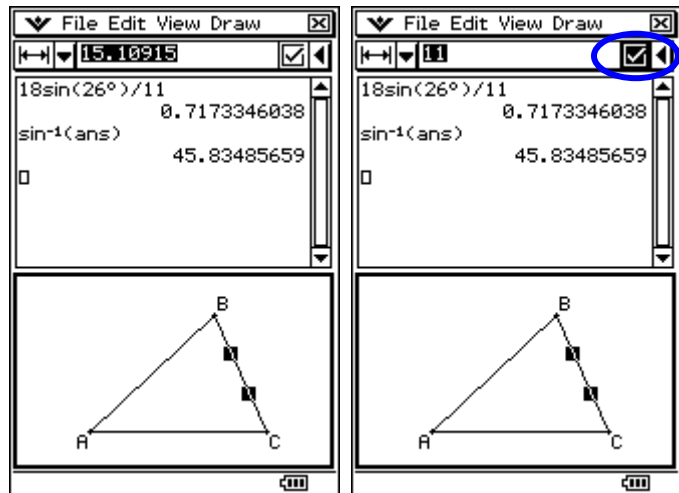
Drawing a Triangle

- Tap the  arrow on the toolbar and select 
- Tap the  icon on the toolbar
- Press and drag; a triangle will appear when



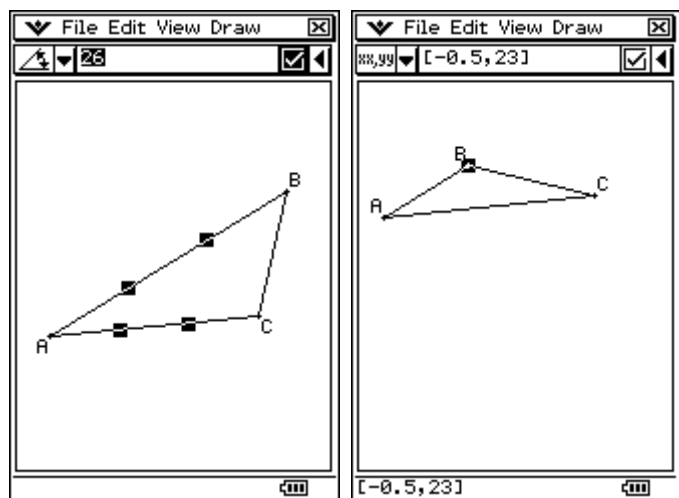
Locking Measures

- Select **side a** by tapping it
- Tap  on the toolbar to see a Measurement Box
- Tap in the box and then input **11** for **side a**
- Press **EXE** (important)
- When you press EXE, the check mark becomes bold which shows side a is locked at 11
- Tap in any white space to deselect**
- Repeat to set side b to 18 and $\angle A$ to 26°



Changing Triangle Form

- When $\angle A$ and side b are set, tap Resize (below status bar)
- Deselect and then select AB and BC ($\angle B$)
- Record the measure for $\angle B$ below
- Deselect and then select just vertex point B
- Press on selection and drag (until $\triangle ABC$ changes)
- Measure $\angle B$ again and record your findings!



1st measurement of $\angle B$: _____

2nd measurement of $\angle B$: _____

Extra credit:

In the preceding example, we set the measures in the order:

1st **side a**

2nd **side b**

3rd $\angle A$

Clear your Geometry window and draw another triangle. Set the measurements for $\triangle ABC$ in the following order:

1st Select **side a** and set the length to 11.

2nd Select $\angle A$ and set its measure to 26° .

3rd Select **side b** and set the length to 18.

Explain why this slightly different order produces an obtuse angle at $\angle B$ instead of acute. Include drawings with your explanation. Also, be convincing in your explanation.

Thank you for attending the workshop! To learn more about the ClassPad, please join ClassPad 101 at www.classpad101.com.