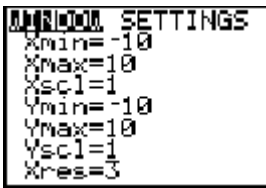# Using Transfrm

APPLICATION

1) Press your APPS key and locate Transfrm ENTER

2) Look at your Y= menu. Whenever your style sub menu looks like this it means that Transfrm is running.**certain games seem to make this a default

3) Press your WINDOW key and notice the new entry, SETTINGS.
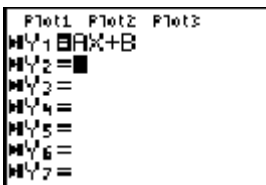

Up arrow to reveal Transfrm menu

4) These three icons represent $>\|$ play and pause
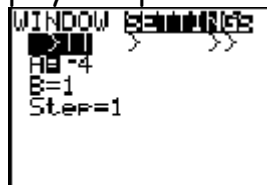
$>$ slide show (my favorite)

$>>$ faster slide show

5) To use the APP enter a general form equation in Y=, such as:

Y = $AX + B$

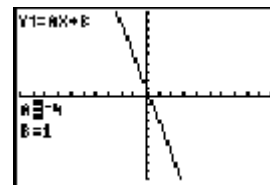example: WINDOW Up Arrow   GRAPH
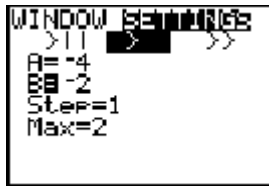   play and pause

Now just press right and left arrow to change the value of A or down arrow to select B and then right and left arrow to change the value of B.

6) WINDOW Up Arrow
   Select slide show

```
WINDOW SETTINGS
   >||  ▶        >>
   A=¯4
   B=¯2
   Step=1
   Max=2
```

What this setting means is that the calculator will compute 5 screens
starting with B = -2 continuing in increments of 1 until B = +2.
This will result in the following 5 equations:
$y=-4x-2$, $y=-4x-1$, $y=-4x$, $y=-4x+1$ and $y=-4x+2$

These will continuously graph. To stop the slide show: ENTER   CLEAR
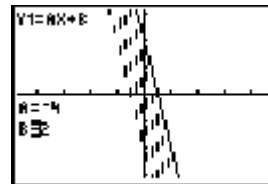
One further feature: Trail On and Trail Off

Press 2nd ZOOM   Select TrailOn   GRAPH

```
RectGC  PolarGC
CoordOn  CoordOff
GridOff  GridOn
AxesOn  AxesOff
LabelOff  LabelOn
ExprOn  ExprOff
TrailOff  TrailOn
```

```
RectGC  PolarGC
CoordOn  CoordOff
GridOff  GridOn
AxesOn  AxesOff
LabelOff  LabelOn
ExprOn  ExprOff
TrailOff  TrailOn
```

```
Y1=AX+B

A=¯4
B=2
```

It will be necessary to "uninstall" or exit Transfrm.

APPS   ENTER   CHECK Y =

```
APPLICATIONS
↑SciTools
:SolveIt
:Start-up
:StudyCrd
:TestGard
■Transfrm
:WhatAngl
```

```
TRANSFRM APPS
1:Uninstall
2:Continue
```
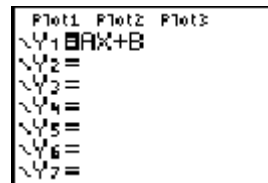
```
Plot1  Plot2  Plot3
\Y1=AX+B
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=
```

All good. ☺

"Slinking" around the sinusoids…

Objective: Students will collect sinusoidal data and use the Transform APPS to find a model of the form: y = AsinB(x-C) + D that will fit their particular data.

Materials:

CBR or CBR2
TI – 83+ or 84 with Transfrm APPS loaded
Slinky

Activity:

1. Connect the CBR to the TI calculator with the black link cord

2. Place the CBR on the floor. One student will move the slinky up and down over the CBR, while another group member operates the calculator.
*** _Hint.._ You will need to nudge the slinky along with a slight bit of wrist action to get consistent results.

3. Setting up the CBR:

   a. Turn on the calculator and press **APPS**
   b. Arrow down to **CBR/CBL**
   c.   Press **ENTER, ENTER, RANGER**
   d.   Press **ENTER**, then **SETUP/SAMPLE**
   e.   Your settings should be as follows:
       Realtime: no
       Time(s):   3
       Display: Dist
       Begin On: ENTER
       Smoothing: None
       Units: Feet
   f.   Arrow to **START NOW**, Press **ENTER**
   g. Follow screen directions to begin data collection

After the data is collected, a graph is displayed. Press **ENTER**. Choose repeat sample until you have an acceptable sinusoidal graph. **QUIT**.
**NOTE: L1 = TIME, L2 = DIST

To look at the graph you want to analyze , turn on [**STAT PLOT**] 1.
**Check to make sure Xlist is in L1 and Ylist is in L2.
Press **ZOOM 9**.

Make a sketch of your graph (label your axes!)

Finding a model in the form: y = AsinB(x − C) + D

    a. Press **APPS** and select **Transfrm**
    b. Press **Y =** and enter y_1 = A sin(B(x- C) +D
    c. Press **GRAPH**. Note the A, B, C, D, on the screen
    d. Press **TRACE** to move the cursor on the graph and answer the following questions:

What is the maximum distance between the slinky and the CBR?_____

How much time elapses between the "peaks" on the graph?_____

What is the minimum distance between the "valleys" on the graph?_____

How much time elapses between the "valleys" on the graph?_____

What is the distance between a "peak" and a "valley"?_____

Now press **GRAPH**

According to your model, what is the:

Amplitude _____

Period _____

Phase Shift _____

Vertical Shift _____

Write the equation for your model:

_____

According to your model, how far from the CBR will the slinky be after 6.28 seconds?

_____

Now let's try different values for:

A ---What happened?_____

B ---What happened?_____

C ---What happened?_____

D ---What happened?_____

Press **APPS, Transfrm, UNINSTALL**

It's all good ☺

Math is sure fun!!