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.....EB_ELASTIC Variant of EB Waveforms USE THIS AS SECODARY PROGRAM
.....*Welcome to EB_Waveforms.BAS:a Program demonstrating the EB pendulum's
.....motion & a display of calculated values & "sine_type" graphs making it easier to
.....compare the xL to xR and yL to yR values. For the purpose of fitting on the a
.....15 inch screen under DOS ; only 24 value sets are calculated on this rotation of
.....the EB Crank ; that is 360 / 15 = 24. Thus an interval of 15 degrees between
.....values occur. This was ORIGINALLY a QBASIC /Quickbasic program...msDOS 5 remember!!
.....FreeBasic-0.16win32 are now employed ( No.-lang needed in command line but you will
.....need -lang command if you choose to use a higher Freebasic version ).....My Gratitude to YOU at http://www.freebasic.net/
*****
#include once "windows.bi" "(14MAY2009=Beginning an attempt to directly do Win32 API calls to put ScrollBars on This Display Window )

'FIRST TO THING TO DO, IS TO GET THE SCREEN MODE INFORMATION, THAT IS... w=width & h=height
Dim w As Integer '...IN FREEBASIC WE NEED TO Type Pre DEFINE EVERY VARIABLE
Dim h As Integer '...THE w, h, DEPTH, DRIVER_NAME$ & ROW.....(needed to shift text for every mode)
Dim DEPTH As Integer'.....are all variables for use in storing Screeninfo and acting on it.
Dim DRIVER_NAME$
Dim ROW As Integer :Dim COL As Integer:Dim ROW1 As Integer: Dim ROW2 As Integer
Dim pixel_aspect_ratio As Single'To Store the Circle Aspect Ratio for a particular srceen width+height
Dim ratio As double
Dim hALF As single

'Now to obtain info about current Screen mode
screeninfo w, h, depth,,,driver_name$'.....aCTUALLY gETTING tHE sCREEN iNFO hERE
'The code below DISPLAY SCREENINFO in DOS BOX When you run the source in an Ide
Print str$(w) + "=width x" + str$(h) + "=height x" + str$(depth) + "=depth";
'Print " using " + driver_name$ + " driver"

'NOW ONLY CAN THE ASPECT RATIO BE CALCULATED FOR THE PROPER DISPLAY OF CIRCLES.
'Remember the syntax for circles is : Circle [target,] [STEP] (x,y), radius[, [color][, [start][, [end][, [aspect][, F]]]]
'AND aspect is the aspect ratio, or the ratio of the y radius over the x radius. THUS : ratio = (y_radius / x_radius) * pixel_aspect_ratio
'Where pixel_aspect_ratio is the ratio of the current mode width over the current mode height, assuming a 4:3 standard monitor.
'If aspect ratio is less than 1, radius is the x radius; If aspect is more Or equal to 1, radius is the y radius.
'BELOW IS THE SCREEN RESOLUTIONS ROW ADJUSTMENTS ARE MADE FOR (only allowed for 17 & 19 inch Screens)( Do not really Need but kept just
in case...)
'Use the If then Structure below to add more Screen Sizes.
*****
*****
'THIS SCREEN SELECTION STRUCTURE ARE ADDED FOR FUTURE FLEXIBILITY IN PIXEL RATIO SELECTION
'AT THE MOMENT ALL RATIO'S ARE SET FOR A 19 inch Screen with 1280 x 1024 pixels Resolution
*****
*****
'640x480_ROW = ? / 800x600_ROW = ? / 1024x768_ROW = 20 / 1152x864 / 1280x1024_ROW = ?
If W = 1280 And H = 960 Then'19 inch Screen
    pixel_aspect_ratio = w/h
    ratio = (55/69)*pixel_aspect_ratio'....Y Measured 54mm and X Measured 55mm
Else
    End If
If W = 1280 And H = 1024 Then'.....19inch Screen
/'
    THE ROW / COL INTRUCTIONS ARE NOT NEEDED NOW BUT THE BLOCK CAN BE
    REPLACED WITH OTHER CODE THAT CAN SHIFT AROUND THE TEXT PLACEMENT ON
    SCREEN ACCORDING TO SCREEN SIZE ( NOT DONE YET ; - LATER..... )
    ROW = 80'.....Change Horizontal ROWS
    COL = 1'.....Option to change COLUMNS
    ROW1 = 10'.....Option to change if needed
    ROW2 = 5'.....Option to change if needed
/'
    pixel_aspect_ratio = w/h
    ratio = (55/69)*pixel_aspect_ratio'....Y Measured 54mm and X Measured 55mm
Else
    End If
If W = 1024 And H = 768 Then'.....17 inch Screen
    pixel_aspect_ratio = w/h
    ratio = (55/69)*pixel_aspect_ratio'....Y Measured 54mm and X Measured 55mm
Else
    End If
If W = 1152 And H = 864 Or W = 1280 And H = 768 Then'.....19 inch Screen
    pixel_aspect_ratio = w/h
    ratio = (55/69)*pixel_aspect_ratio'....Y Measured 54mm and X Measured 55mm
Else
    End If
*****
'(Personal reminder: Keep 19inch at 75 Hertz Refresh: Avoid fit to screen problem @ 85Hertz)
screenres W,H '.....Placed HERE WE APPLY THE MAXIMUM SCREEN RESOLUTION
*****
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***** STARTING THE *****
***** VARIABLE INTRODUCTIONS FOR *****
***** EB CALCULATIONS *****
*****

'Since rotation are involved we 1st need to define/decide the number of steps / points
'on the crank circle. Of course more points require more x+y values to be stored, thus
'we set up a variable that can be used to alter the Dim ( Dimension ) spaces allowed
'for such x+y storage so that more or less points can be specified on the circle swing
degr% = 15'.....1st Variable can be used as is or Changed to create greater/finer Steps.....DO NOT CHANGE:-KEEP @ 24 STEPS FOR NOW
STEPS& = 360 / degr% '.....CUTTING UP THE CIRCLE INTO SECTORS.....Applying 1st calculation
*****
*****

st = 5'.....WIDHT OF STEP BETWEEN WAVE LineS{copied to the top;EasierToChange}
'The st variable will later be used to define the distance between the grid Lines for
'the graphs plotted on the left , right and above the left EB dynamic display.
*****
*****

'Dist1 is THE critical variable and can be changed between the indicated Max & Min

Dim Dist1 As Integer
Input "Enter [Dist1 value -123 to 123 = Distance between pivot & crank]: ", Dist1
'Dist1 = 62' 90'123'112'90'62'90'70'123'90'123
'KE=62EP THE ABOVE DISTANCE VARIABLE AT THIS POSITION = DEFINE IT BEFORE CRANK VARIABLE
'.....70=DOUBLE HUMP:"PIVOT to CRANK distance:DO NOT MAKE TOO SMALL
'Maximun Dist1(ance) = ((Sqrad * 2)-CrankR):.....In this instance Maximum Dist1 = 123.....TRY 122;- NOTE THE PLATO SHAPE IN THE
WAVEFORM
'Minimum Dist1(ance) = CrankR : .....In this instance Minimum Dist1 = 62
*****
*****

'.....Pi is needed to Calculate the 2 Angle sets originating from the CrankCentre & PivotCentre
Const PI As Double = 3.1415926535897932
f = 3'.....Getting the factor by which to enlarge Values for RIGHTSIDE EB Drawing
up = 700 '.....To move graphics around = Shift Y Co-ordinate value towards enlargement to the right
'.....Only to be used when needed ( not used now )
*****
*****

'STARTING VARIABLES TO SET UP BASIC GEOMETRY OF EB PENDULUM LINKAGES BELOW
xCenter1 = 480'.....This is the x position of PIVOT and the x position of CRANK CENTRE POINT.....LEFT EB

IF Dist1 >= 0 then
yCrosshair1 = 610'.....This is the y of PIVOT Point.....LEFT EB
else
yCrosshair1 = 810'.....This is the y of PIVOT Point.....LEFT EB
end if
yCrosshair2 = yCrosshair1 + Dist1'.....CRANK CENTRE y position fixed.....LEFT EB
Sqrad = 90 '.....The Square's Linkages/Levers lenghts fixed.....LEFT EB
Rbig = 200 '.....Applied to left EB only : Raduis or length of Pendulum Two Extensions Levers.....LEFT EB
CrankR = Sqrad/1.618 '.....CRANK RADUIS.....LEFT EB
'THE CRANK RADUIS ARE SET TO THE GOLDEN RATIO IN RELATION TO THE LENGHT OF SIDE OF SQUARE
CrankRA = (Sqrad/1.618)*f'.....CRANK RADUIS.....RIGHT EB
xCenterA = 950'.....The static variable used on the Enlarged Diagram Pivot-X position.....RIGHT EB
IF Dist1 >= 0 then
yCrosshairA = 120'.....The static variable used on the Enlarged Diagram Pivot-Y Position.....RIGHT EB
else
yCrosshairA = 490'.....The static variable used on the Enlarged Diagram Pivot-Y Position.....RIGHT EB
end if
yCrosshairB = yCrosshairA + (Dist1*f)'.....The static variable used on the Enlarged Diagram Crank-Y Position.....RIGHT EB
hALF = ((yCrosshairB-yCrosshairA)/2) + yCrosshairA'...Calculating Horizontal MIDDLE Line Co-ordinate.....RIGHT EB
*****

'Arrays BELOW are to hold values calculated FURTHER below
*****

Dim xC(1 to STEPS&) '.....Store x co-ordinates values of CRANK SWING
Dim yC(1 to STEPS&) '.....y co-ordinates values of CRANK SWING
Dim xT(1 to STEPS&) '.....Store x co-ordinates values of Trace Circle swing
Dim yT(1 to STEPS&) '.....y co-ordinates values of Trace Circle swing
Dim xL(1 to STEPS&) '.....Store x co-ordinates values of Left side linkage joint of Square
Dim yL(1 to STEPS&) '.....y co-ordinates values of Left side linkage joint of Square
Dim xR(1 to STEPS&) '.....Store x co-ordinates values of Right Linkages Joint
Dim yR(1 to STEPS&) '.....y co-ordinates values of Right Linkages Joint
Dim xE(1 to STEPS&) '.....Store x co-ordinates values of Extension Linkages Joint
Dim yE(1 to STEPS&) '.....y co-ordinates values of Extension Linkages Joint
Dim xCL(1 to STEPS&) '.....Store left link joint x values plotted to the Left of Center or Vertical Line
Dim xCR(1 to STEPS&) '.....right link joint x Values plotted to the Right of Center or Vertical Line

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Dim yCL(1 to STEPS&)' .....Store left link joint y values plotted on the leftside Horizontal Line
Dim yCR(1 to STEPS&)' .....right link joint y Values plotted to the rightside Horizontal Line
Dim xRminusxL(1 to STEPS&)'.....x value on the right subtract the x value on the left and store difference
Dim yRminusyL(1 to STEPS&)'.....y value on the right subtract the y value on the left and store difference
Dim Dist2(1 to STEPS&)' .....Dist2 is the Distance between the Pivot to the EB pendulums free point
Dim xLA(1 to STEPS&)' .....Enlarged Right side Moving TopLeftLink X
Dim yLA(1 to STEPS&)' .....Enlarged Right side Moving TopLeftLink Y
Dim xRA(1 to STEPS&)' .....Enlarged Right side Moving TopRightLink X
Dim yRA(1 to STEPS&)' .....Enlarged Right side Moving TopRightLink Y
Dim xCA(1 to STEPS&)' .....Enlarged Right side Moving CRANK SWING X
Dim yCA(1 to STEPS&)' .....Enlarged Right side Moving CRANK SWING Y
Dim xTA(1 to STEPS&)' .....Enlarged Right side Trace Circle Swing X
Dim yTA(1 to STEPS&)' .....Enlarged Right side Trace Circle Swing Y
Dim SnX(1 to STEPS&)' .....Enlarged Right side GRAPH HORIZONTAL LineS Y CO-ORDINATE

dim LGVarStr(1 to STEPS&) As string
dim RGVarStr(1 to STEPS&) As string
'Dim Rgraph(1 to STEPS&)' .....Y spacing for Right Side EB Graph's Grid
'*****
'*****DEFINING SOME VARIABLES AS INTEGER OR DOUBLE BELOW*****
dim angle1 As Double ' .....IMPORTANT TO CORRECTLY DEFINE angle1 Variable up to 15 digits
dim angle2 As Double ' .....IMPORTANT TO CORRECTLY DEFINE angle2 Variable up to 15 digits
Dim dia As integer
Dim stepper As integer
Dim SC As integer
Dim Sircle As integer
Dim i As integer
dim Bngle As Double ' .....IMPORTANT TO CORRECTLY DEFINE Bngle Variable up to 15 digits
dim Cngle As Double ' .....IMPORTANT TO CORRECTLY DEFINE Cngle Variable up to 15 digits
Dim e AS integer
Dim q As integer
Dim col2 As integer
Dim Rgraph As integer
Dim r As integer
Dim d As integer
Dim Sr AS integer
dim Srt As integer
dim Gr As integer
dim Rresult As integer' .....FOR Calculating the sine wave resultant
dim Lresult As integer' .....FOR Calculating the sine wave resultant
Dim SinCR As integer' .....SIZE OF.....RIGHT Side Eb RIGHT SIDE TWINE WAVE CIRCLE SIZE for GRAPH
SinCR = 4
Dim SinCL As integer' .....SIZE OF.....RIGHT Side Eb LEFT SIDE TWINE WAVE CIRCLE SIZE for GRAPH
SinCL = 4
Dim SinCRo As integer' .....OVERWRITE of RIGHT Side Eb RIGHT SIDE TWINE WAVE CIRCLE SIZE for GRAPH
SinCRo = 3
Dim SinCLo As integer' .....OVERWRITE of RIGHT Side Eb LEFT SIDE TWINE WAVE CIRCLE SIZE for GRAPH
SinCLo = 3
Dim SinCRb As integer' .....CIRCLES of RIGHT Side Eb RIGHT SIDE TWINE WAVE CIRCLE SIZE for GRAPH ALL 24 AT ONCE
SinCRb = 3
Dim SinCLb As integer' .....CIRCLES of RIGHT Side Eb RIGHT SIDE TWINE WAVE CIRCLE SIZE for GRAPH ALL 24 AT ONCE
SinCLb = 3
Dim SinCz As integer' .....CIRCLES of RIGHT Side Eb RIGHT SIDE TWINE WAVE CIRCLE SIZE for GRAPH ALL 24 AT ONCE
SinCz = 5
'*****
AngCR = 0'...Introducing the main angle variable on the crank STARTING at zero.(To be incremented/increased)
'*****
'Setting up xy Co-ordinates and Array space for more positionable TEXT.
'*****

Dim Txtx001 As Integer, Txy001 As Integer, TxtT001 As String
Dim Txtx002 As Integer, Txy002 As Integer, TxtT002 As String
Dim Txtx003 As Integer, Txy003 As Integer, TxtT003 As String
Dim Txtx004 As Integer, Txy004 As Integer, TxtT004 As String
Dim Txtx005 As Integer, Txy005 As Integer, TxtT005 As String
Dim Txtx006 As Integer, Txy006 As Integer, TxtT006 As String
Dim Txtx007 As Integer, Txy007 As Integer, TxtT007 As String
Dim Txtx008 As Integer, Txy008 As Integer, TxtT008 As String
Dim Txtx009 As Integer, Txy009 As Integer, TxtT009 As String
Dim Txtx010 As Integer, Txy010 As Integer, TxtT010 As String
Dim Txtx011 As Integer, Txy011 As Integer, TxtT011 As String
Dim Txtx012 As Integer, Txy012 As Integer, TxtT012 As String
Dim Txtx013 As Integer, Txy013 As Integer, TxtT013 As String
Dim Txtx014 As Integer, Txy014 As Integer, TxtT014 As String
Dim Txtx015 As Integer, Txy015 As Integer, TxtT015 As String
Dim Txtx016 As Integer, Txy016 As Integer, TxtT016 As String
Dim Txtx017 As Integer, Txy017 As Integer, TxtT017 As String

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angle1
If Dist1 >= 0 then
  angle1 = CDb1(AngCR * (PI / 180))'.....Converting degrees to Radians..THEN  NEXT thing to do is to CALCULATE THE CRANK SWING
Else
  angle1 = (CDbl(AngCR * (PI / 180)))*-1'.....Converting degrees to Radians..THEN  NEXT thing to do is to CALCULATE THE CRANK SWING
End if

      a = (CrankR * sin(angle1)) '....the a length of Triangle of CRANK SWING..HORIZONTAL of Triangle of CRANK SWING calculated here.
      b1 = (CrankR * Cos(angle1))'.....b length of Triangle of CRANK SWING..VERTICAL  of Triangle of CRANK SWING calculated here.
xC(i%) = xCenter1 + a '.....X of coordinate of CRANK SWING....._1st Co-ordinate OF CRANK SWING.
vC(i%) = vCrosshair2 - b1 '.....Y of coordinate of CRANK SWING*****

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b2 = yCrosshair2 - b1 - yCrosshair1'.....Triangle in Square Defined
c2 = Sqr(a ^ 2 + b2 ^ 2)'.....Side of Top Triangle
C3 = c2 / 2'.....Half of Side/Top Triangle
angle2 = CDbl(CrankR * Sin(angle1))/c2'.....Opposite Angle
W = Sqr((Sgrad ^ 2) - (C3 ^ 2))'.....Half of Chord
'CALCULATING COORDINATES FOR TRACE CIRCLE:needed for FREE POINT
Calc.*****
'*****
**
xTsmall = C3 * Sin(angle2)'.....x Distance to Trace Circle center
yTsmall = C3 * Cos(angle2)'.....y Distance to Trace Circle center

If Dist1 >= 0 then
xT(i%) = xCenter1 + xTsmall'.....x Value for Trace Circle swing.....2nd Co-ordinate Important Position
yT(i%) = yCrosshair1 + yTsmall'.....y Value for Trace Circle swing*****
Else
xT(i%) = xCenter1 - xTsmall'.....x Value for Trace Circle swing.....2nd Co-ordinate Important Position
yT(i%) = yCrosshair1 - yTsmall'.....y Value for Trace Circle swing*****
End if

If Dist1 >= 0 then
'CALCULATING COORDINATES FOR SQUARE LEVER : 2 SETS OF
X_Y_COORDINATES*****
'*****
**
xL(i%) = xT(i%) - (W * Cos(angle2))'.....x Co-ordinate for the Left Side.....3rd Co-ordinate What we really need !!!
yL(i%) = yT(i%) + (W * sin(angle2))'.....y Co-ordinate for the Left Side*****
xR(i%) = xT(i%) + (W * Cos(angle2))'.....x Co-ordinate for the Right Side*.....4th Co-ordinate Partner of 3rd XY !!!
yR(i%) = yT(i%) - (W * sin(angle2))'.....y Co-ordinate for the Right Side*****
Else
xL(i%) = xT(i%) + (W * Cos(angle2))'.....x Co-ordinate for the Left Side.....3rd Co-ordinate What we really need !!!
yL(i%) = yT(i%) - (W * sin(angle2))'.....y Co-ordinate for the Left Side*****
xR(i%) = xT(i%) - (W * Cos(angle2))'.....x Co-ordinate for the Right Side*.....4th Co-ordinate Partner of 3rd XY !!!
yR(i%) = yT(i%) + (W * sin(angle2))'.....y Co-ordinate for the Right Side*****
End if

'NOW TO CALCULATE PENDULUM EXTENSIONS: x and y POINTS
*****
'DEPENDANT ONLY ON VARIABLES w and c3 and
angle2.*****
'*****
**
cbig = sqr(Rbig ^ 2 - W ^ 2)'.....Pythagoras applied to get to Straight distance
'.....between Pivot and Pendulum Extension point.
aBigx = (C3 + cbig) * Sin(angle2)'.....x distance between Pivot and Pendulum point.
bBigy = (C3 + cbig) * Cos(angle2)'.....y distance between Pivot and Pendulum point.
xE(i%) = xCenter1 + aBigx'.....Extension point x moving co-ordinate point.....5th Co-ordinate set (Not really needed)
yE(i%) = yCrosshair1 + bBigy'....Extension point y moving co-ordinate point.....but included to show real curve
'*****
**
'Variables for storage in Arrays are Defined below for the Right Side enlarged Diagram *****
'Enlarged by factor : f = 3*****
'Only 8 moving co-ordinates are defined /needed here.*****
If Dist1 >= 0 then
xTA(i%) = (xCenterA + (xTsmall*f))'.....Right Side EB Small circle at Trace Circle Swing X
yTA(i%) = (yCrosshairA + (yTsmall*f))'.....Right Side EB Small circle at Trace Circle Swing Y
xLA(i%) = (xTA(i%) - (W * Cos(angle2))*f)'.....Enlarged EB Right side Moving TopLeftLink X
yLA(i%) = (yTA(i%) + (W * sin(angle2))*f)'.....Enlarged EB Right side Moving TopLeftLink Y
xRA(i%) = (xTA(i%) + (W * Cos(angle2))*f)'.....Enlarged EB Right side Moving TopRightLink X
yRA(i%) = (yTA(i%) - (W * sin(angle2))*f)'.....Enlarged EB Right side Moving TopRightLink Y
xCA(i%) = (xCenterA + (a*f))'.....Enlarged EB Right side Moving CRANK SWING X
yCA(i%) = (yCrosshairB - (b1*f))'.....Enlarged EB Right side Moving CRANK SWING Y
else
xTA(i%) = (xCenterA - (xTsmall*f))'.....Right Side EB Small circle at Trace Circle Swing X
yTA(i%) = (yCrosshairA - (yTsmall*f))'.....Right Side EB Small circle at Trace Circle Swing Y
xLA(i%) = (xTA(i%) - (W * Cos(angle2))*f)'.....Enlarged EB Right side Moving TopLeftLink X
yLA(i%) = (yTA(i%) + (W * sin(angle2))*f)'.....Enlarged EB Right side Moving TopLeftLink Y
xRA(i%) = (xTA(i%) + (W * Cos(angle2))*f)'.....Enlarged EB Right side Moving TopRightLink X
yRA(i%) = (yTA(i%) - (W * sin(angle2))*f)'.....Enlarged EB Right side Moving TopRightLink Y
xCA(i%) = (xCenterA + (a*f))'.....Enlarged EB Right side Moving CRANK SWING X
yCA(i%) = (yCrosshairB - (b1*f))'.....Enlarged EB Right side Moving CRANK SWING Y
end if
'*****
'THE MAIN CALCULATIONS ARE DONE ABOVE: NOW REMAINING IS TO DO ANY ADDITIONAL CALCULATIONS ONLY.'*****
'*****

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'DO NOT MOVE AngCR postion in code

AngCR = AngCR + degr%'.....Placed here to ALLOW initial Zero value

'ADDITIONAL CALC FOR Dist2 variable
'Dist2 is the Distance between the Pivot to the EB pendulums free point
'This can be used to determine if any true curve are followed by the free point.
'The Program 08 Vertical EB prove that there are no true arch followed but a
'constantly changing curve: thus a true curve.(Not needed for constant display)

Dist2(i%) = (sqr((Rbig ^ 2) - (W ^ 2))) + C3'..same as above but no need for co-oord calc.
If AngCR >= 360 Then
degr% = 0
End If
'Beginning to connect or extract x- values to a central Vertical Line
'away from the top left hand 0-origin co-coordinate system of computer default

xCL(i%) = xCenter1 - xL(i%) '.....The real x - displacement to the Left
xCR(i%) = xR(i%) - xCenter1 '.....The real x - displacement to the Right
'Cutting Short or Shifting the y values to a easier to compare 1 to 2 digit
'before the decimal point figures.

yCL(i%) = yL(i%) - 100
yCR(i%) = yR(i%) - 100

Let n = n + 1

circle(xRA(i%),568 + Rgraph),SinCRb,15'.RIGHT SIDE EB's RIGHT SIDE GRAPH CIRCLE's Very Important BIG CIRCLES BEING PLACED HERE
"ALL AT ONCE"
circle(xLA(i%),568 + Rgraph),SinCLb,15'.RIGHT SIDE EB's LEFT SIDE GRAPH CIRCLE's Very Important BIG CIRCLES BEING PLACED HERE
"ALL AT ONCE"
Rgraph = Rgraph+12
If Rgraph = 288 then
Rgraph = 0
End if

'Setting up Sine Wave co-ordinate array which is the result of The Twine Wave "Cancellation" Resultant on the RIGHT SIDE EB
Rresult = (xRA(i%)) - xCenterA'Using CentreLine as Zero...get the distance to the RIGHT side Twine Circles
Lresult = xCenterA - (xLA(i%))'Using CentreLine as Zero...get the distance to the LEFT side Twine Circles
SnX(i%) = xCenterA+(Rresult - Lresult)'.....NOW THE 2 VALUES MUST BE SUBTRACTED FROM EACH OTHER
'.....xCenterA - SnX(i%)=SINEWAVE GRAPH CIRCLE's CO-ORDINATE FROM THE CENTRE Line

Next i% '.....Going back for some more Calculating

n = 0'...RESET n to zero after it has been used in FOR NEXT programing structure

'THE MAIN "FOR NEXT" LOADING OF THE ARRAYS WAS DONE ABOVE

'Variable's below are for Lines on Bottom Left EB Moving Diagram and it's Pulse Graph Line's *****

setback = 410'A Value to Shift Graph Lines by TO MAKE THIS PULSE GRAPH MORE MORE EASILY REPOSITIONABLE
xV = 300
xH = 400 '....NOT USED YET
yV1 = setback
yV2 = 440 + setback

line (xV, yV1)-(xV, yV2), 15'.....Middle Vertical white Line for LEFT EB Pulse Graph
'.....st = WIDHT OF STEP BETWEEN WAVE LineS { Defined at the top; Easier to change }
c = 1'.....beginning color value for Top Left Pulse Graph

i% = 1'Reset Subscript to 1 after use in ForNext above (the Array loading) to reuse i% fresh in DoLoop

'IMPORTANT : The second main functional part of the Program follow *****

Do '.....The loop begin.....for the continues display of eb in motion *****

***** AFTER THE SYNCSCREEN STATEMENTS , THE ERASING / OVERWRITE ACTION FOLLOW *****

'..... THIS CODE CALCULATES THE DISTANCE VALUES TO GRAPH CIRCLES FROM X-CENTERLINE (WHICH SERVE AS ZERO) FOR EACH GRAPH LINE.
'..... USE THESE VALUES TO DRAW YOUR OWN INDEPENDANT GRAPHS AS A CHECK. BEST OF ALL IS TO REDO THE WHOLE THING GRAPHICALLY
'..... (IN A CAD PROGRAM OR BY HAND DRAWING :- as you prefer) USING A CIRCLE AND SQUARE TO PAINSTAKINGLY DRAW OUT THE GRAPHS
'..... FOR VARIOUS DIST1 VALUES OR ANY COMBINATION OF CIRCLE TO SQUARE RATIOS. YOU WILL NOTE OR RATHER REDISCOVER THIS RULE :
'..... 1ST SQUARE / CIRCLE RELASHIONSHIP RULE ONE :
'..... The free point(B) of one side of the Square are 1/24th out of phase with the other/ opposite side free point(D) when one corner
'..... of such a Square is fixed to a Pivot(A) and that corners opposite mate(C) is fixed to a Circle which serves as a Crank.
'..... MOTION THEN IS INTRODUCED BY THE CRANK AND THE FREE POINTS CO-ORDINATES TRACED ON A GRID PRODUCING A DOUBLE WAVEPATTERN WITH
'..... THIS SECONDARY RULE COMING INTO EFFECT (SECONDARY SINCE IT ENTIRELY DEPENDS ON THE 1st RULE ;-THAT RULE CAUSING IT)
'..... 2ND SQUARE / CIRCLE RELASHIONSHIP RULE TWO :
'..... The Double wavepattern called Twine Waves (for TWIN) are in a relashionship of one wave being the exact match to the other
'..... with this distinction that one Twine Wave is a Vertical and a Horizontal Mirror of the other Twine Wave and 1/24th out of phase
'..... with its Twine mate this not being the rule itself but a disription leading to the rule which is thus : The Twine Wave Graph
'..... Values when subtracted from each other leave a Resultant Exact Sine Wave Pattern instead of cancelling out each other.
'..... THIS THEN LEAD TO THE THIRD RULE WHICH CAN HAVE PROFOUND IMPLICATIONS IF FOUND TO BE TRUE IN NATURE PERTAINING TO ALL THINGS
'..... INVOLVING THE SINE WAVE FORM ESPECIALLY RELATED TO THE ELECTROMAGNETIC RADIATION SPECTRUM AND THUS THE SCIENCE OF PHYSICS
'..... WITH HINTS FOUND IN THE SHAPE OF THE TWINE WAVE NEAR MAXIMUM VALUES (OF PIVOT TO CRANK CENTRE) THAT MAY SHED SOME LIGHT ON
'..... PROTEIN FOLDING IN THE BIO SCIENCES. NOW TO STATE THE THIRD RULE WHICH IS DIFFERENT FROM THE 1st AND 2nd RULE SINCE IT NEED TO
'..... PROVEN IN NATURE AND AS SUCH ARE NOT AS DEFINITE NOW AS THE GEOMETRICALLY / MATHEMATICALLY ALREADY PROVEN 1st AND 2nd RULE.
'..... 3RD SQUARE / CIRCLE RELASHIONSHIP RULE THREE AS POSTULATE :
'..... Any Sine Wave measurement can be said to be indicating a Resultant from Two Twine Waves thus two Twin Particles Closely coupled
'..... interacting with each other thus revealing a Sine Wave to our instruments while the Variation in shape of the Twine forms and
'..... thus the Rich Variety of Information the Twine Waves carry;-remain hidden from such instruments as long as they are not capable
'..... of decoupling the Sine Wave into its Twine Forms so that such infomation can be read. If by accident or design :- decoupling
'..... of a Twine system take place , then in that case each Seperate Twine wave will act with Soliton wave (Single Wave)
'..... characterictics. The natural State of Waveforms are thus n a Twineform (therefore presenting a Sine Resultant) but due to
'..... moments when the split up Twine particle will then (while it is for a short while in that split up state) present each
'..... portion of the separated Twine wave as a Soliton Waveform with its characteristic Bulging (to one side) Odd shape even
'..... eamong the electromagnetic spectrum particles. THE WORDING " natural State of Waveforms " are comparable to the habit of
'..... people that walk together in a parrallel direction to each other and while in 'conversation' with each other to fall in Step or
'..... mimmic each others rate and lenght thus Rythm of Step. A similar thing are suggested to happen at the subatomic particle level.
'..... FOR MORE ON THE POSTULATE IMPLICATIONS OF SOLITON / TWINE WAVE INTERACTION SEE THE COMMENT NOTE FURTHER ALONG IN THIS PROGRAM.
'..... FROM THE NOTE: On this day the 8th of February 2004

***** Some Background Boxes for the Text and general feel of layout *****

Line (628, 0)-(1276,2), 0,BF'.....THIN BLACK FILL box at RIGTH TOP***
Line (628, 2)-(1276,1003), 5,B '.....LARGE PURPLE RIM Line box at RIGTH TOP***
Line (629, 3)-(1275,97), 15,B '.....SMALL BRIGHT WHITE RIM Line box at RIGHT TOP***
Line (630, 4)-(1274,96), 5,B '.....MIDDLE SMALL PURPLE RIM Line box at RIGHT TOP***
Line (629,1002)-(1275,875), 15,B '.....SMALL BRIGHT WHITE RIM Line box at RIGHT BOTTOM***
Line (630,1001)-(1274,876), 5,B '.....MIDDLE SMALL PURPLE RIM Line box at RIGHT BOTTOM***
Line (0,0)-(6,1005), &h00054,bf'.....VERTICAL BACKGROUND rim box at LEFT***
Line (6,0)-(9,1005), &h00053 ,bf'.....VERTICAL background rim box at LEFT***
Line (9,0)-(11,1005), &h00052 ,bf'.....VERTICAL background rim box at LEFT***
Line (11, 0)-(12,1005), &h00051 ,bf'.....VERTICAL background rim box at LEFT***
Line (12, 0)-(13,1005), &h00050 ,bf'.....VERTICAL background rim box at LEFT***

'CHANGING SOME TEXT TO CO-ORDINATE POSITIONABLE FORMAT (10 DECEMBER 2008)*****

TxtT049 = " iam EB_GRAPH 13th of April 2009" 'Programmers Initials SHADOW-01
Ttxt049 = 14 '.....Position of X co-ordinate of text 049
Ttxty049 = 12 '.....Position of y co-ordinate of text 049
Line (16,0)-(623,34), &h00050,bf'.....Optional Background Color Box for Txt049
Draw String (Ttxt049, Ttxty049), TxtT049, 15'.....Shadow color

```

*****
TxtT001 = " iam EB_GRAPH 13th of April 2009" 'Programmers Initials
Txtx001 = 12 '.....Position of X co-ordinate of text 001
Ttxty001 = 10 '.....Position of y co-ordinate of text 001
Draw String (Txtx001, Ttxty001), TxtT001, 0'.....Color for text
*****
*****

TxtT050 = " A LOOK AT THE WAVEFORM's GENERATED BY THE EB's LINK CO-ORDINATES" 'EB Intro comment SHADOW-02
Txtx050 = 14 '.....Position of X co-ordinate of text 050
Ttxty050 = 28 '.....Position of y co-ordinate of text 050
Draw String (Txtx050, Ttxty050), TxtT050, 15'.....Shadow color
*****
*****

TxtT002 = " A LOOK AT THE WAVEFORM's GENERATED BY THE EB's LINK CO-ORDINATES" 'EB Intro comment
Txtx002 = 12 '.....Position of X co-ordinate of text 002
Ttxty002 = 25 '.....Position of y co-ordinate of text 002
Draw String (Txtx002, Ttxty002), TxtT002, 0'.....Color for text
*****
*****

'Placing Moving Text*****
'Calc Point Text being placed ( Moving Text tagged to Trace Point )
TxtT026 = "Calc. Point"
Txtx026 = xTA(i%)+5 '.....Position of X co-ordinate of text 026
Ttxty026 = yTA(i%)+5 '.....Position of X co-ordinate of text 026
Draw String (Txtx026, Ttxty026), TxtT026, 15'.....Color is bRIGHT wHITE FOR mOVING text
*****

'XLEFT FREE Point Text being placed ( Moving Text tagged to FREE Point )
TxtT037 = "L.FREE"
Txtx037 = xLA(i%)-50 '.....Position of X co-ordinate of text 037
Ttxty037 = yLA(i%)+15 '.....Position of X co-ordinate of text 037
draw String (Txtx037, Ttxty037), TxtT037, 15'.....Color is bRIGHT wHITE FOR mOVING text
*****

'XRIGHT FREE Point Text being placed ( Moving Text tagged to FREE Point )
TxtT038 = "R.FREE"
Txtx038 = xRA(i%)+5 '.....Position of X co-ordinate of text 038
Ttxty038 = yRA(i%)+15 '.....Position of X co-ordinate of text 038
Draw String (Txtx038, Ttxty038), TxtT038, 15'.....Color is bRIGHT wHITE FOR mOVING text
'Comment about the Graphs below : It's implication .....
Locate 5,3 : color &h000000,&h000050:Print " "
Locate 6,3 : color &h000000,&h000050:Print " "
Locate 7,3 : color &h000000,&h000050:Print " Any Sine Wave measurement can be said to be indicating a Resultant from "
Locate 8,3 : color &h000001,&h000051:Print " Two Twine Waves thus two Twin Particles Closely coupled interacting with "
Locate 9,3 : color &h000008,&h000052:Print " each other and revealing a Sine Wave to our instruments while the "
Locate 10,3 : color &h000009,&h000053:Print " Variation in shape of the Twine forms and thus the Rich Variety of "
Locate 11,3 : color &h000000,&h000054:Print " Information the Twine Waves carry;- remain hidden from such instruments "
Locate 12,3 : color &h000001,&h000055:Print " as long as they are not capable of decoupling the Sine Wave into its "
Locate 13,3 : color &h000008,&h000056:Print " Twine Forms so that such infomation can be read. If by accident or design "
Locate 14,3 : color &h000009,&h000057:Print " ;- decoupling of a Twine system take place , then in that case each "
Locate 15,3 : color &h000000,&h000058:Print " Seperated Twine wave will act with Soliton wave ( Single Wave ) "
Locate 16,3 : color &h000001,&h000059:Print " characteristics.( WAVES= MOSTLY ELECTROMAGNETIC WAVES /ATOMIC PARTICLES ) "
*****
'THE MATHEMATICAL ENGINE PRINTED TO SCREEN BELOW *****
*****

TxtT019 = " THIS IS THE MATHEMATICAL CORE OF THE PROGRAM ( A CHAOS CALCULATOR ? )"
Txtx019 = 12 '.....Position of X co-ordinate of text 019
Ttxty019 = 138 '.....Position of X co-ordinate of text 019
Line (24,135)-(615,155),&h000099,bf'.....Optional Background Color Box for TxtT019
Draw String (Txtx019, Ttxty019), TxtT019, 15'.....Color is bRIGHT wHITE for text
Line (23,134)-(616,395),5,b'.....FINE PUPRLE BOX AROUND MATHEMATICAL CORE OF PROGRAM
Line (22,133)-(617,393),15,b'.....FINE White BOX AROUND MATHEMATICAL CORE OF PROGRAM
*****

Locate 20,4 : color 7,8: Print" angle1 = CDBL(AngCR * (PI / 180))......Converting degrees to Radians.01 "
Locate 21,4 : color &h000065,8:Print" a.... = (CrankR * SIN(angle1))...a length of Triangle of CRANK SWING.02 "
Locate 22,4 : color 7,8: Print" b1.... = (CrankR * COS(angle1))...b length of Triangle of CRANK SWING.03 "
Locate 23,4 : color &h000065,8:Print" xC(i%) = xCenter1 + a .....X coordinate of CRANK SWING.04 "
Locate 24,4 : color 7,8: Print" yC(i%) = yCrosshair2 - b1.....Y coordinate of CRANK SWING.05 "
Locate 25,4 : color &h000065,8:Print" b2.... = yCrosshair2 - b1 - yCrosshair1....Triangle in Square Defined.06 "
Locate 26,4 : color 7,8: Print" c2.... = SQR(a ^ 2 + b2 ^ 2)......Side of Top Triangle.07 "
Locate 27,4 : color &h000065,8:Print" C3.... = c2 / 2.....Half of Side/Top Triangle.08 "
Locate 28,4 : color 7,8: Print" angle2 = CDBL(CrankR * SIN(angle1)) / c2.....Opposite Angle.09 "
Locate 29,4 : color &h000065,8:Print" W.... = SQR((Sqrad ^ 2) - (C3 ^ 2))......Half of Chord.10 "
*****

TxtT036 = " CALCULATING COORDINATES below FOR TRACE CIRCLE:(for FREE POINT Calc)"
Txtx036 = 9 '.....Position of X co-ordinate of text 036
Ttxty036 = 237 '.....Position of X co-ordinate of text 036
Line (24,232)-(615,247),&h000099,bf'.....Optional Background Color Box for Txt036

```



```
Draw String (Ttxt036, Txy036), TxtT036, 15'.....Color is bRIGHT wHITE
*****

Locate 32,4 : color 7,8:    Print" xTsmall= C3 * SIN(angle2).....x Distance to Trace Circle center.11 "
Locate 33,4 : color &h000065,8:Print" yTsmall= C3 * COS(angle2).....y Distance to Trace Circle center.12 "
Locate 34,4 : color 7,8:    Print" xT(i%) = xCenter1 + xTsmall.....x Value for Trace Circle swing.13 "
Locate 35,4 : color &h000065,8:Print" yT(i%) = yCrosshair1 + yTsmall.....y Value for Trace Circle swing.14 "
*****

TxtT040 = "  CALCULATING COORDINATES FOR SQUARE LEVER  FOR 2 SETS OF X_Y_COORDINATES"
Ttxt040 = 9  '.....Position of X co-ordinate of text 040
Txy040 = 284 '.....Position of X co-ordinate of text 040
Line (24,280)-(615,295),&h000099,bf'.....Optional Background Color Box for Txt040
Draw String (Ttxt040, Txy040), TxtT040, 15'.....Color is bRIGHT wHITE
*****

Locate 38,4 : color 7,8:    Print" xL(i%) = xT(i%) - (W * COS(angle2)).....x Coord for Left FreePoint.15 "
Locate 39,4 : color &h000065,8:Print" yL(i%) = yT(i%) + (W * SIN(angle2)).....y Coord for Left FreePoint.16 "
Locate 40,4 : color 7,8:    Print" xR(i%) = xT(i%) + (W * COS(angle2)).....x Coord for Right FreePoint.17 "
Locate 41,4 : color &h000065,8:Print" yR(i%) = yT(i%) - (W * SIN(angle2)).....y Coord for Right FreePoint.18 "
*****

TxtT041 = "  CALCULATE PENDULUM : x & y: DEPENDANT ONLY ON VARIABLES w & c3 & angle2."
Ttxt041 = 9  '.....Position of X co-ordinate of text 041
Txy041 = 333 '.....Position of X co-ordinate of text 041
Line (24,328)-(615,343),&h000099,bf'.....Optional Background Color Box for Txt041
Draw String (Ttxt041, Txy041), TxtT041, 15'.....Color is bRIGHT wHITE
*****

Locate 44,4 : color 7,8:    Print" cbig  = SQR(Rbig ^ 2 - W ^ 2).....19 "
Locate 45,4 : color &h000065,8:Print" aBigx  = (C3 + cbig) * SIN(angle2).....20 "
Locate 46,4 : color 7,8:    Print" bBigy  = (C3 + cbig) * COS(angle2).....21 "
Locate 47,4 : color &h000065,8:Print" xE(i%) = xCenter1 + aBigx.....THE X CO-OORD OF PENDULUM POINT.22 "
Locate 48,4 : color 7,8:    Print" yE(i%) = yCrosshair1 + bBigy.....THE Y CO-OORD OF PENDULUM POINT.23 "
Locate 49,4 : color 0,&h000099:Print"                                ""BOTTOM CORE PAINT BOX
*****

***TEXT ON RIGHT SIDE ENLARGED DIAGRAM*****
*****

'Pivot Point Text being placed ( For Top Right Side Enlarged Diagram.)
TxtT021 = "Pivot Point"
Ttxt021 = xCenterA -42 '.....Position of X co-ordinate of text 021
Txy021 = yCrosshairA-18 '.....Position of X co-ordinate of text 021
Draw String (Ttxt021, Txy021), TxtT021, 8
*****

'Trace Circle Text being placed ( For Top Right Side Enlarged Diagram.)
TxtT022 = "Trace Circle =half Diameter"
Ttxt022 = xCenterA -320 '.....Position of X co-ordinate of text 022
Txy022 = yCrosshairA+25 '.....Position of X co-ordinate of text 022
'.....Pointing to Trace Circle solid white Line
Line(727,155)-(850,155),8,,&HFF00:Line(850,155)-(xTA(i%) ,yTA(i%)),8,,&HFF00
Draw String (Ttxt022, Txy022), TxtT022, 8
*****

'Trace Circle 2nd Line of Text being placed ( For Top Right Side Enlarged Diagram.)
TxtT023 = "of Crank. "
Ttxt023 = xCenterA -320 '.....Position of X co-ordinate of text 023
Txy023 = yCrosshairA+39 '.....Position of X co-ordinate of text 023
Draw String (Ttxt023, Txy023), TxtT023, 8
*****

TxtT006 = ""
Ttxt006 = xCenterA -320 '.....Position of X co-ordinate of text 006
Txy006 = yCrosshairA+53 '.....Position of X co-ordinate of text 006
Draw String (Ttxt006, Txy006), TxtT006, 8
*****

'Crank Center Text being placed ( For Top Right Side Enlarged Diagram.)
TxtT024 = "Crank Center"
Ttxt024 = xCenterA -42 '.....Position of X co-ordinate of text 024
Txy024 = yCrosshairB+18 '.....Position of X co-ordinate of text 024
Draw String (Ttxt024, Txy024), TxtT024, 8
*****

'Midpoint Text being placed ( For Top Right Side Enlarged Diagram.)
TxtT025 = "Midpoint between Pivot & Crank Center"
Ttxt025 = xCenterA -320 '.....Position of X co-ordinate of text 025
Txy025 = hALF + 5'.....Position of X co-ordinate of text 025
Draw String (Ttxt025, Txy025), TxtT025, 8
*****

***DISCLAIMER TEXT BEING PLACED ON SCREEN BELOW*****
TxtT027 = " THE NATURAL STATE OF WAVEFORMS  are thus in a Twineform ( therefore presenting""*
Ttxt027 = xCenterA -318 '.....Position of X co-ordinate of text 027*****
Txy027 = 5'.....Position of X co-ordinate of text 027*****
Draw String (Ttxt027, Txy027), TxtT027, 0'*****
```

```
*****
TxtT028 = " a Sine Resultant ) but during moments when the Twine particle split, then"*
Txtx028 = xCenterA -318 '.....Position of X co-ordinate of text 028*****
Txy028 = 15'.....Position of X co-ordinate of text 028*****
Draw String (Txtx028, Txy028), TxtT028, &h000080'*****
'*****
TxtT029 = " (while it is for a short while in that split up state) each wave portion of the"*
Txtx029 = xCenterA -318 '.....Position of X co-ordinate of text 029*****
Txy029 = 25'.....Position of X co-ordinate of text 029*****
Draw String (Txtx029, Txy029), TxtT029, 0'*****
'*****
TxtT030 = " separated Twine wave present as a Soliton Waveform with its"*
Txtx030 = xCenterA -318 '.....Position of X co-ordinate of text 030*****
Txy030 = 35'.....Position of X co-ordinate of text 030*****
Draw String (Txtx030, Txy030), TxtT030, &h000080'*****
'*****
TxtT031 = " characteristic Bulging ( to one side ) Odd shape even among the electromagnetic"*
Txtx031 = xCenterA -318 '.....Position of X co-ordinate of text 031*****
Txy031 = 45'.....Position of X co-ordinate of text 031*****
Draw String (Txtx031, Txy031), TxtT031, 0'*****
'*****
TxtT032 = " spectrum particles. THE WORDING natural State of Waveforms are comparable"*
Txtx032 = xCenterA -318 '.....Position of X co-ordinate of text 032*****
Txy032 = 55'.....Position of X co-ordinate of text 032*****
Draw String (Txtx032, Txy032), TxtT032, &h000080'*****
'*****
TxtT033 = " to people that walk together in a parallel direction to each other and while"*
Txtx033 = xCenterA -318 '.....Position of X co-ordinate of text 033*****
Txy033 = 65'.....Position of X co-ordinate of text 033*****
Draw String (Txtx033, Txy033), TxtT033, 0'*****
'*****
TxtT034 = " in 'conversation' with each other, the Habit is to Fall in Step or mimic rate &""*
Txtx034 = xCenterA -318 '.....Position of X co-ordinate of text 034*****
Txy034 = 75'.....Position of X co-ordinate of text 034*****
Draw String (Txtx034, Txy034), TxtT034, &h000080'*****
'*****
TxtT035 = " stride. Does a similar thing occur at the subatomic particle level ??????????"*
Txtx035 = xCenterA -318 '.....Position of X co-ordinate of text 035*****
Txy035 = 85'.....Position of X co-ordinate of text 035*****
Draw String (Txtx035, Txy035), TxtT035, 0'*****
'*****
'KEEP THE HORIZONTAL SHIFT FOR LEFT EB DIAGRAM ( TO LAZY TO FIX NOW )
s = xCenter1 - xV'.....Horizontal Shift
'*****
'*****
/'
"ERROR CHECKING STILL NEED SOME CODE - BASIC IDEA BELOW - NEED SOME CORRECTIONS *****
"Doing Some Error Checking below to ensure that the Dist1 Input Variable is not too large or too small.
CheckMax = ((Squad * 2)-CrankRA)
If Dist1 >= CheckMax+5 Then
draw string (427,405),"Print Error in INPUT: Dist1 between PIVOT & CRANK CENTRE is TOO BIG",15
draw string (427,445),"Keep Dist1 Variable LESS THAN : ",15: draw string (477,445),str(CheckMax),10:
ElseIf Dist1 <= CrankR Then
draw string (427,405),"Print Error in INPUT: Dist1 between PIVOT & CRANK CENTRE is TOO SMALL",15
draw string (427,415),"Keep Dist1 Variable MORE THAN : ",15: draw string (477,415),str(CrankR),10:
Else
End If
"*****
"THE BELOW IF to END IF...can BE USED TO DISPLAY DISCRIPTIONS AT VARIOUS DIST1 VALUES
"STILL NEED TO BE CODED.....
"If Dist1 < 100 And Dist1 >= 70 Then '.....Min. distance between Pivot and Crank
"d = Dist1 '.....Shift down to midrange distance
"ElseIf Dist1 > 100 And Dist1 <= 123 Then '.....Max. distance between Piv. & Crank
"d = Dist1
"Else
"End If
'ERROR CHECKING ABOVE STILL NEED SOME CODE- NOT COMPLETE YET *****
/'
'*****
'*****
'***** RIGHT EB ***** RIGHT EB ***** RIGHT EB ***** RIGHT EB *****
'*****
```

```
*** Below = BEGIN__Enlarged EB diagram to the RIGHT SIDE of screen. *****
*****
*** RIGHT EB **** RIGHT **** RIGHT EB **** RIGHT EB **** RIGHT EB *****
*****
'Triangle of Pivot*****
line(xCenterA,yCrosshairA)-(xCenterA+20,yCrosshairA+30),8'*****
line(xCenterA+20,yCrosshairA+30)-(xCenterA-20,yCrosshairA+30),8'*****
line(xCenterA,yCrosshairA)-(xCenterA-20,yCrosshairA+30),8'*****
paint(xCenterA+2,yCrosshairA+10),&h000083,8'PURPLE COLOR FILL FOR PURPLE TRIANGLE*****
*****DEFAULT GEOMETRIC LineS / NONE MOVING LineS REDrawn*****
*****
circle (xCenterA,yCrosshairB), CrankRA, 15,,ratio'.....Draw circle of Crank
Line (xCenterA, yCrosshairA)-(xCenterA +300, yCrosshairA), 15,,&HFF010'.....Horizontal right Line @ Pivot
Line (xCenterA-240,yCrosshairA)-(xCenterA,yCrosshairA), 15,,&HFF010'.....Horizontal left Line @ Pivot
Line (xCenterA-232,yCrosshairB)-(xCenterA,yCrosshairB), 15,,&HFF00'.....Horizontal Line pointing to Crank Circle
Line (xCenterA-90, hALF)-(xCenterA, hALF), 15,,&HFF00'.....Display Horizontal MIDDLE Line
line (xCenterA,yCrosshairA-20)-(xCenterA,yCrosshairA+724), 15,,&HFF010'.....Vertical Slide Axis Center Line
line (xCenterA,568)-(xCenterA,yCrosshairA+724), 15'.....Solid pat of Slide Axis Center Line
*****
'CIRCLES *****
'circle (xCenterA,yCrosshairA),6, 1 '.....PIVOT Point
'paint (xCenterA,yCrosshairA),0, 1 '.....PIVOT Fill Color
'circle (xCenterA,yCrosshairA),5, 3 '.....Center of PIVOT Circle
circle (xCenterA,yCrosshairB),8, 1 '.....Center of CRANK
paint (xCenterA,yCrosshairB),2, 1 '.....CRANK Center Fill Color
circle (xCenterA,yCrosshairB),2, 3 '.....Center of Crank Smaller Circle
'MOTION BEING MADE
BELOW*****
Line (xCenterA, yCrosshairA)-(xLA(i%),yLA(i%)), 11 '.....Applied Enlarged Right side Moving TopLeftLink
Line (xCenterA, yCrosshairA)-(xRA(i%),yRA(i%)), 11 '.....Applied Enlarged Right side Moving TopRightLink
circle (xCA(i%), (yCA(i%))), 5, 15 '.....Applied Enlarged Right side Moving Crank Swing
Line (xCA(i%), yCA(i%))-(xLA(i%), yLA(i%)), 11'.....Moving BottomLeftLink
Line (xCA(i%), yCA(i%))-(xRA(i%), yRA(i%)), 11'.....Moving BottomRightlink
Line (xCA(i%), yCA(i%))-(xCenterA, yCrosshairB), 14'.....Moving Crank
*****
*****
*****
*****
***** TRACE CIRCLE PLACED ON SCREEN - on the Top Right Enlarged diagram *****
*****
*****
'circle((xTA(i%) ), (yTA(i%))), 5, 15'.....Placing Small circle at Trace Circle Swing
'circle(xCenterA,hALF), 10, 15 '.....Trace Circle Center
circle(xCenterA,hALF),((CrankRA)/2), 15,,ratio'.....Trace Swing CIRCLE(Keep to show math relationship)
Line (xCenterA,hALF)-(xTA(i%) ,yTA(i%)), 14,&HFF010'.....Trace Crank Line(not needed - no literal trace crank exist)
*****
*****
*** Colapsible Square Trace Lines PLACED ON SCREEN - on the Top Right Enlarged diagram *****
*****
*****
Line(xLA(i%),yLA(i%))-(xRA(i%),yRA(i%))), 11'.....Left XY connected to Right XY
Line(xLA(i%),yLA(i%))-(xRA(i%),yRA(i%))), 0,,&HFF00'.....Left XY to Right XY Broken Line Overlay (HORIZONTAL TENSION)
Line(xCA(i%),yCA(i%))-(xCenterA,yCrosshairA),11'.....Crank XY connected to Pivot XY
Line(xCA(i%),yCA(i%))-(xCenterA,yCrosshairA), 0,,&HFF00'.....Crank XY to Pivot XY Broken Line overlay (VERTICAL TENSION)
*****
*****
*****
*****
***** NOVEMBER 2002: GEOMETRY Lines SHOWING THE TRIANGLES DEFINING THE **
*****
***** EB'S MATHEMATICAL ENGINE. THE TRACE CIRCLE xT & yT Co-ordinates **
*****
***** IS CENTRAL TO UNDERSTANDING THE GEOMETRY / MATHEMATICS OF THE EB. **
*****
***** {A little bit of liberty is taken to present it as EB_ART-istic} **
*****
*****
'CODE GENERATING THE 4 TRIANGLE'S LineS INTERSECTING AT TRACE CRANK handle(svastika=SANSKRIT LANGUAGE)
*****
*****
*****
'Making variables easier???? to use by cutting out the Array Subscript
'reference (i%):- (Only Done for ENLARGED right side Variables)*****
*****
xBTrc% = xTA(i%)'.....Big Trace circle's Crank x Co-ordinate***01
yBTrc% = yTA(i%)'.....Big Trace circle's Crank y Co-ordinate***02
xBCntr% = xCenterA'.....Big Pivot x Co-ordinate*****03
yBCrsshR%= yCrosshairA'..Big Pivot y Co-ordinate*****04
```

```
xBCrnk% = xCA(i%) '.....Big Crank x Co-ordinate*****05
yBCrnk% = yCA(i%) '.....Big Crank y Co-ordinate*****06
xBRght% = xRA(i%) '.....RightSide BigSquare Freepoint x Co-ord.**07
yBRght% = yRA(i%) '.....RightSide BigSquare Freepoint y Co-ord.**08
xBLft% = xLA(i%) '.....Left Side BigSquare Freepoint x Co-ord.**09
yBLft% = yLA(i%)'.....Left Side BigSquare Freepoint y Co-ord.**10
!*****
!*****PLACING THE 4 TRIANGLES BELOW*****
!*****
'TOP.....
'FROM TRACE CRANK to PIVOT Y _Co-ordinate (TOP red Lines)****
'Vertical thick Line *****
Line (xBTrc%, yBCrsshr%)-(xBTrc% + 2, yBTrc%), 4,BF,&HF120
'Horizontal thick Line *****
Line (xBTrc%, yBCrsshr%)-(xBCntr%, yBCrsshr% + 2),4,BF,&HF120
!*****
!*****
'.....RIGHT SIDE EB's RIGHTMOST
'FROM TRACE CRANK TO RIGHT SQRAD X _Co-ordinate (RIGHT red Lines)
'Vertical thick Line*****
Line (xBRght%, yBTrc%)-(xBRght% - 2, yBRght%), 4,BF,&HF120'***
'Horizontal thick Line'*****
Line (xBRght%, yBTrc% + 2)-(xBTrc%, yBTrc%), 4,BF,&HF120'***
circle (xBRght%,yBRght%),5,15 'Right side of Collapsible Sqaure**
!*****
*****
'BELOW IS THE.....Extension Line Downward on the Right side *****
Line (xRA(i%), yBTrc%)-(xRA(i%), 568 + Rgraph), 15, , &HF222'*****
circle (xRA(i%),568 + Rgraph),SinCR,4'GRAPH CIRCLE's Very Important THE REASON FOR EVERTHNG DONE HERE
PAINT (xRA(i%),568 + Rgraph),15,4'....GRAPH CIRCLE's Very Important THE REASON FOR EVERTHNG DONE HERE
!*****
!*****
'LEFTMOST OF RIGHT SIDE EB.....
'FROM TRACE CRANK TO LEFT SQRAD X _Co-ordinate'(LEFT Lines)**
'Vertical thick Line*****
Line (xBLft%, yTA(i%))-(xBLft% + 2, yBLft%), 4,BF,&HF120
'Horizontal thick Line*****
Line (xBLft%, yBTrc% + 2)-(xBTrc%, yBTrc%), 4,BF,&HF120
circle (xBLft%,yBLft%),5,15 'Left side of Collapsible Sqaure*
!*****
*****
'BELOW IS THE.....Extension Line Downward on the left side*****
Line (xLA(i%), yTA(i%))-(xLA(i%), 568 + Rgraph),15,,&HF222'.*****
circle(xBLft%, 568 + Rgraph),SinCL,1'.....GRAPH CIRCLE's Very Important THE REASON FOR EVERTHNG DONE HERE
PAINT(xBLft%, 568 + Rgraph),15,1'.....GRAPH CIRCLE's Very Important THE REASON FOR EVERTHNG DONE HERE
!*****
!*****
!*****
!*****
'.....BOTTOM
'FROM TRACE CRANK TO MAIN CRANK SWING Y _Co-ord.(BOTTOM red Lines)
'Vertical thick Line*****
Line (xBTrc%, yBCrnk%)-(xBTrc% + 2, yBTrc%), 4,BF,&HF120'****
'Horizontal Line*****
Line (xBTrc%, yBCrnk%)-(xBCrnk%, yBCrnk% - 2), 4,BF,&HF120'****
!*****
!*****
'End of Code for Enlargement Diagram to the Right Side of Screen**
'Continue with code for the Eb Diagram @ the Left side of Screen**
!*****
/'
!*****
!*****
'LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB ***
'LEFT eb moving geometry displayed. BELOW IS THE CODE*****
'LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB ***
!*****
"dia = 37 'Diameter of touch (momentum transfer) circles*****
!*****
"The EB left Weight + right Weight circle's are not needed anymore (06oct2008)*****
"Code are left here below For later picking apart And reusing it elsewhere.*****
"circle (xL(i%) - s, yL(i%) + d), dia, 10 '.....Left Weight
"circle (xR(i%) - s, yR(i%) + d), dia, 10 '.....Right Weight
"paint (xL(i%) - s, yL(i%) + d), 4, 10 '.....Left Weight
```

```

"paint (xR(i%) - s, yR(i%) + d), 1, 10'.....Right Weight
"If i% = 13 Then'*****
"circle (xL(i%) - s, yL(i%) + d), dia - 2, 14'.....Left Weight Flash
"circle (xR(i%) - s, yR(i%) + d), dia - 2, 15'.....Right Weight Flash
"Else'*****
"End If'*****
'/
'*****
'*** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB ***
'*** Below = BEGIN__ EB diagram to the BOTTOM LEFT side of screen.*****
'*** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB *** LEFT EB ***
'*****
'*****
'*****The variable "d" below will have a value other than zero when the ERROR CHECK ( of Dist1 value ) is complete.
line (xCenter1 - s, yCrosshair1 + d)-(xL(i%) - s, yL(i%) + d),7'.....TopLeftLink
line (xCenter1 - s, yCrosshair1 + d)-(xR(i%) - s, yR(i%) + d),7'.....TopRightLink
circle (xC(i%) - s, yC(i%) + d), 5, 7'.....CRANK SWING
line (xC(i%) - s, yC(i%) + d)-(xL(i%) - s, yL(i%) + d), 7'.....BottomLeftLink
line (xC(i%) - s, yC(i%) + d)-(xR(i%) - s, yR(i%) + d), 7'.....BottomRightlink
line (xC(i%) - s, yC(i%) + d)-(xCenter1 - s,yCrosshair2 + d),7'.....Crank
'*****
'/
'*****
'eb : BOTTOM left Pendulum extension MOVING *****
'*****
'*****
Line (xL(i%) - s, yL(i%) + d)-(xE(i%) - s, yE(i%) + d),11'.....Left Pendulum Extension LINK
Line (xR(i%) - s, yR(i%) + d)-(xE(i%) - s, yE(i%) + d),11'.....Right Pendulum Extension LINK
circle(xE(i%) - s, yE(i%) + d), 17, 10'.....Extension Line Linkage Point
paint (xE(i%) - s, yE(i%) + d), 0, 10'.....Extension Line Linkage Point
if i% >= 0 and i% <=23 then
Line (xE(i%) - s, yE(i%) + d)-(xE(i% + 1) - s, yE(i% + 1) + d),12'.....Vector Lines at Extension point
elseif i%=24 then
Line (xE(24) - s, yE(24) + d)-(xE(1) - s, yE(1) + d),12'.....Last Vector Line at Extension point
end if
'*****
'/
'broken moving Lines point to X-waveform AT TOP OF eb *****
'*****
line (xL(i%) - s, yL(i%) + d)-(xV - xCL(i%), yV1 + n),7,,&HF222'.....LINE POINTING TO THE Left Side TOP GRAPH
line (xR(i%) - s, yR(i%) + d)-(xV + xCR(i%), yV1 + n),7,,&HF222'.....LINE POINTING TO THE Right Side TOP GRAPH
'*****
'broken moving Lines point to Y-waveform AT LEFT & RIGHT SIDE OF eb ( ALSO 1/24th OUT OF PHASE ) *****
'*****
line (xL(i%) - s, yL(i%) + d)-(xH + n - 370, yL(i%) + d),7,,&HF222'..LINE POINTING TO THE Left Side LEFT GRAPH
line (xR(i%) - s, yR(i%) + d)-(xH + n + 50, yR(i%) + d),7,,&HF222'..LINE POINTING TO THE Right Side RIGHT GRAPH
'*****
"Circles indicating mechanical linkages limits NOT NEEDED BUT KEEP FOR LATER USE *****
'*****
"Engle = 29 * (PI / 180) '.....Converting Ending Angle to radians
"Bngle = 180 * (PI / 180)'.....Converting Begining Angle to radians
"Cngle = -25 * (PI / 180) '.....Converting Ending Angle to radians
"circle (xCenter1 - s, yCrosshair1 + d), Sqrad, 7, Bngle, Engle'.....Semi Circle
"circle (xCenter1 - s, yCrosshair1 + d), Sqrad, 10, Bngle, Cngle'.....Semi Circle
'*****
'IMPORTANT : Drawing THE CIRCLE OF CRANK FOR LEFT EB *****
circle (xCenter1 - s, yCrosshair2 + d), CrankR, 7,,,ratio'.....Draw circle of Crank
'*****
'APPLYING ADDITIONAL CALC FOR Dist2 variable *****
"Dist2 is the Distance between the Pivot to the EB pendulums free point
"This can be used to determine if any true curve are followed by the free point.
"The Program 08 Vertical EB prove that there are no true arch followed but a
"constantly changing curve: thus a true curve. (Not needed for constant display)
'*****
"Circle(xCenter1 - s, yCrosshair1 + d),Dist2(i%),8'only a circle radius is needed.
'*****
'*****
'***** FOR RIGHT SIDE EB
'COMPARISON Lines BETWEEN GRAPH WAVEFORMS
'*****
Line (xLA(i%),568 +Rgraph)-(xCenterA,568 +Rgraph+1),&H000035,BF'.....LEFT TWINE WAVE :- Line to CENTER OF GRAPH
Line (xRA(i%),568 +Rgraph)-(xCenterA,568 +Rgraph+1),&H000040,BF'.....RIGHT TWINE WAVE :- Line to CENTER OF GRAPH
Line (xCenterA,568 +Rgraph+2)-(SnX(i%),568 +Rgraph+4),15,BF'.....MIDDLE SINE WAVE :- Line to CENTER OF GRAPH
Line (xCenterA,568 +Rgraph-2)-(SnX(i%),568 +Rgraph-4),15,BF'.....MIDDLE SINE WAVE :- Line to CENTER OF GRAPH
'*****

```

```
'*****'
'*****END EB DISPLAY*****'
'*****'
ScreenSync ' DO NOT MOVE FROM THIS POSITION
ScreenSync ' REDUCE SRCEENSYNC TO INCREASE SPEED OF MOTION DIAGRAM.
ScreenSync ' ADD MORE SCREENSYNC STATEMENT'S TO SLOW DOWN DIAGRAM MOTION.
ScreenSync ' 9 SCREENSYNC STATEMENTS MAKE FOR A REASONABLE SPEED ON
ScreenSync ' A 3200MHz AMD ATHLON COMPUTER.
ScreenSync
ScreenSync
ScreenSync
ScreenSync
ScreenSync
ScreenSync
'*****
'*****
'Drawing the static cross hair Lines from Pivot center outwards.....LEFT EB
line (xCenter1 - s, yCrosshair1 + d)-(xCenter1 - s, 865), 7'.....down
line (xCenter1 - s - 5, yCrosshair1 + d)-(-14, yCrosshair1 + d), 11,,&HFF010'.....left
line (xCenter1 - s + 5, yCrosshair1 + d)-(-600, yCrosshair1 + d), 11,,&HFF010'.....right
'*****
'*****
'***** EB DISPLAY being ERASED with 0 & 7 color below *****
'*****
'Enlarged EB diagram to the top RIGHT side of screen erase with color 7 *****
'*****
'*****
Line (xCenterA, yCrosshairA)-(xLA(i%),yLA(i%)), 7 '.....Applied Enlarged Right side Moving TopLeftLink
Line (xCenterA, yCrosshairA)-(xRA(i%),yRA(i%)), 7 '.....Applied Enlarged Right side Moving TopRightLink
circle (xCA(i%), (yCA(i%))), 5, 7 '.....Applied Enlarged Right side Moving Crank Swing
Line (xCA(i%), yCA(i%))-(xLA(i%), yLA(i%)), 7'.....Moving BottomLeftLink
Line (xCA(i%), yCA(i%))-(xRA(i%), yRA(i%)), 7'.....Moving BottomRightlink
Line (xCA(i%), yCA(i%))-(xCenterA, yCrosshairB), 7'.....Moving Crank
Line (xCenterA,hALF)-(xTA(i%) ,yTA(i%)), 7,,&HFF010'.Trace Crank Line(not needed - no real trace crank exist)
'*** Colapsible Square Trace Lines PLACED ON SCREEN - on the Top Right Enlarged diagram *****
'*****
Line(xLA(i%),yLA(i%))-(xRA(i%),yRA(i%)),7'.....Left XY connected to Right XY
Line(xLA(i%),yLA(i%))-(xRA(i%),yRA(i%)),7'.....Left XY to Right XY Broken Line Overlay
Line(xCA(i%),yCA(i%))-(xCenterA,yCrosshairA),7'.....Crank XY connected to Pivot XY
Line(xCA(i%),yCA(i%))-(xCenterA,yCrosshairA),7'.....Crank XY to Pivot XY Broken Line overlay
Line(850,155)-(xTA(i%) ,yTA(i%)),7,,&HFF00'.....Pointing to Trace Circle solid white Line
'*****
'*****
'FROM TRACE CRANK TO PIVOT Y_Co-ordinate.....(TOP red Lines) RIGHT SIDE EB
'BLANKING Vertical thick Line *****
Line (xBTrc%, yBCrssh%)-(xBTrc% + 2, yBTrc%),7,BF'*****
'BLANKING Horizontal thick Line *****
Line (xBTrc%, yBCrssh%)-(xBCntr%, yBCrssh% + 2),7,BF'*****
'
'
'FROM TRACE CRANK TO MAIN CRANK SWING Y_Co-ord.....(BOTTOM red Lines) RIGHT SIDE EB
'BLANKING Vertical thick Line*****
Line (xBTrc%, yBCrnk%)-(xBTrc% + 2, yBTrc%),7,BF'*****
'BLANKING Horizontal Line*****
Line (xBTrc%, yBCrnk%)-(xBCrnk%, yBCrnk% - 2),7,BF'*****
'
'
'FROM TRACE CRANK TO RIGHT SQRAD X_Co-ordinate.....(RIGHT red Lines) RIGHT SIDE EB
'BLANKING Vertical thick Line*****
Line (xBRght%, yBTrc%)-(xBRght% - 2, yBRght%),7,BF'*****
'BLANKING Horizontal thick Line*****
Line (xBRght%, yBTrc% + 2)-(xBTrc%, yBTrc%),7,BF'*****
circle (xBRght%,yBRght%),5,7 '.....Right side of Collapsible Sqaure*****
'
'
'FROM TRACE CRANK TO LEFT SQRAD X_Co-ordinate'.....(LEFT red Lines) RIGHT SIDE EB
'BLANKING Vertical thick Line*****
Line (xBLft%, yBTrc%)-(xBLft% + 2, yBLft%),7,BF'*****
'BLANKING Horizontal thick Line*****
Line (xBLft%, yBTrc% + 2)-(xBTrc%, yBTrc%),7,BF'*****
circle (xBLft%,yBLft%),5,7 '.....Left side of Collapsible Sqaure*****
'
'*****
'RIGHT SIDE EB : RIGHTMOST MOVING PROJECTION VERTICAL Line TO GRAPH.....RIGHTMOST RIGHT SIDE EB
Line (xBRght%, yBTrc%)-(xBRght%, 568 + Rgraph),7,,&HF222'.....ERASE
```

EB

```
'RIGHT SIDE EB : RIGHTMOST GRAPH CIRCLE POINTS.....RIGHTMOST
circle (xRA(i%),568 + Rgraph),SinCRo,4'.....OVERWRITE
        if i% >=0 AND i% <= 23 then
Line(xRA(i%),568 + Rgraph)-(xRA(i%+1),568 + Rgraph+12),0'.....Graph Circles Connecting black Lines
        end if
'RIGHT SIDE EB : LEFTMOST MOVING PROJECTION VERTICAL Line TO GRAPH.....LEFTMOST RIGHT SIDE EB
Line (xBLft%, yBTrc%)-(xBLft%, 568 + Rgraph),7,&HF222'.....ERASE
'RIGHT SIDE EB : LEFTMOST GRAPH CIRCLE POINTS.....LEFTMOST
circle(xLA(i%), 568 + Rgraph),SinCLo,1'.....OVERWRITE
        if i% >=0 AND i% <= 23 then
Line(xLA(i%),568 + Rgraph)-(xLA(i%+1),568 + Rgraph+12),0'.....Graph Circles Connecting black Lines
        end if
'RIGHT SIDE EB : SINEWAVE RESULTANT BEING PLACED HERE BELOW FOR THE 1st & ONLY TIME.....SINEWAVE RIGHT SIDE

circle (SnX(i%),568 + Rgraph),SinCz,5'THE MUCH DESIRED SINE WAVE RESULTANT BEING DISPLAYED
PAINT (SnX(i%),568 + Rgraph),15,5'.....THE MUCH DESIRED SINE WAVE RESULTANT BEING DISPLAYED
        if i% >=0 AND i% <= 23 then
Line(SnX(i%),568 + Rgraph)-(SnX(i%+1),568 + Rgraph+12),0'.....Graph Circles Connecting black Lines
        end if
For Sr = 1 to 24'.....SINE WAVE RESULTANT CIRCLES BEING DISPLAYED ALL AT ONCE
circle (SnX(Sr),568 +Srt),SinCz,5'.....TO REFRESH SINE GRAPH
PAINT(SnX(Sr),568 +Srt),15,5
        if Sr >=0 AND Sr <= 23 then
line(SnX(Sr),568 +Srt)-(SnX(Sr+1),580+Srt),1'.....OVERWRITE ALL AT ONCE Connecting black Lines
        End If
Srt=Srt+12
If Srt = 288 Then
Srt =0
End If
Next Sr
'*****
'*****
'*****
'COMPARISON Lines BETWEEN GRAPH WAVEFORMS ON RIGHTSIDE EB
Line (xLA(i%),568 +Rgraph)-(xCenterA,568 +Rgraph+1),7,BF'.....LEFT TWINE WAVE :- Line to CENTER OF GRAPH
Line (xRA(i%),568 +Rgraph)-(xCenterA,568 +Rgraph+1),7,BF'.....RIGHT TWINE WAVE :- Line to CENTER OF GRAPH
Line (xCenterA,568 +Rgraph+2)-(SnX(i%),568 +Rgraph+4),7,BF'.....MIDDLE SINE WAVE :- Line to CENTER OF GRAPH
Line (xCenterA,568 +Rgraph-2)-(SnX(i%),568 +Rgraph-4),7,BF'.....MIDDLE SINE WAVE :- Line to CENTER OF GRAPH
'*****
'*****
'*****
'*****
'*****
'RIGHT SIDE EB*****
'Moving Text being ERASED '*****
'*****
Ttxt026 = "Calc. Point" '*****
Ttxt026 = xTA(i%)+5 '.....Position of X co-ordinate of text 026
Ttxty026 = yTA(i%)+5 '.....Position of X co-ordinate of text 026
Draw String (Ttxt026, Ttxty026), Ttxt026, 7'*****
'XLEFT FREE Point Text being ERASED ( Moving Text tagged to FREE Point )'*****
Ttxt037 = "L.FREE"*****
Ttxt037 = xLA(i%)-50 '.....Position of X co-ordinate of text 037
Ttxty037 = yLA(i%)+15 '.....Position of X co-ordinate of text 037
Draw String (Ttxt037, Ttxty037), Ttxt037, 7'*****
'XRIGHT FREE Point Text being ERASED ( Moving Text tagged to FREE Point )'*****
Ttxt038 = "R.FREE"*****
Ttxt038 = xRA(i%)+5 '.....Position of X co-ordinate of text 038
Ttxty038 = yRA(i%)+15 '.....Position of X co-ordinate of text 038
Draw String (Ttxt038, Ttxty038), Ttxt038, 7'*****
'*****
'*****
'Left Eb Erase below*****
'*****
'circle (xL(i%) - s, yL(i%) + d), dia, 0'*****
'circle (xR(i%) - s, yR(i%) + d), dia, 0'*****
'paint (xL(i%) - s, yL(i%) + d), 0, 0'.....Left Weight
'paint (xR(i%) - s, yR(i%) + d), 0, 0'.....Right Weight
Line (xCenter1 - s, yCrosshair1 + d)-(xL(i%) - s, yL(i%) + d), 0'*****
Line (xCenter1 - s, yCrosshair1 + d)-(xR(i%) - s, yR(i%) + d), 0'*****
circle (xC(i%) - s, yC(i%) + d), 5, 0'*****
Line (xC(i%) - s, yC(i%) + d)-(xL(i%) - s, yL(i%) + d), 0'*****
Line (xC(i%) - s, yC(i%) + d)-(xR(i%) - s, yR(i%) + d), 0'*****
Line (xC(i%) - s, yC(i%) + d)-(xCenter1 - s, yCrosshair2 + d), 0'Crank*****
'Circle (xL(i%) - s, yL(i%) + d), dia - 2, 0'.....Left Weight
```

```
'Circle (xR(i%) - s, yR(i%) + d), dia - 2, 0'.....Right Weight
'MOVING broken Line connect to X-waveform*****
'*****
Line (xL(i%) - s, yL(i%) + d)-(xV - xCL(i%), yV1 + n), 0, , &HF222'.....Left Side
Line (xR(i%) - s, yR(i%) + d)-(xV + xCR(i%), yV1 + n), 0, , &HF222'.....Right Side
'MOVING broken Line connect to Y-waveform*****
'*****
Line (xL(i%) - s, yL(i%) + d)-(xH + n - 370, yL(i%) + d), 0,,&HF222'.....Left Side
Line (xR(i%) - s, yR(i%) + d)-(xH + n + 50, yR(i%) + d), 0,,&HF222 '.....Right Side
'MOVING eb extension Lines'*****
'*****
'Line (xL(i%) - s, yL(i%) + d)-(xE(i%) - s, yE(i%) + d), 0'.....From Left
'Line (xR(i%) - s, yR(i%) + d)-(xE(i%) - s, yE(i%) + d), 0'.....From Right
'circle (xE(i%) - s, yE(i%) + d), 17, 0'.....Extension Line Linkage Point
'circle (xE(i%) - s, yE(i%) + d), 15, 0'.....Extension Line Linkage Point
'*****
'***** END OF EB SWEEP DISPLAY ABOVE *****
'*****
'GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS GRAPHS
GRAPHS** _LEFT EB ONLY
'GRAPH BELOW eb__Waveform Lines to the LEFT SIDE EB X-VALUES ONLY *****
'*****
Line (xV, yV1 + n)-(xV - xCL(i%), yV1 + n), c'.....xLEFT*****
circle (xV - xCL(i%), yV1 + n), 2, 15 '.....Same color outside circ's*****
paint (xV - xCL(i%), yV1 + n), 12, 15 'ALWAYS KEEP THE PAINT BOUNDARY THE SAME COLOR AS CIRCLE'S ***
'*****
'GRAPH BELOW eb__Waveform Lines to the RIGHT SIDE X-VALUES ONLY *****
'*****
Line (xV, yV1 + n)-(xV + xCR(i%), yV1 + n), c + 1'.....xRIGHT
circle (xV + xCR(i%), yV1 + n), 2, 15 '.....same color outside circ's
paint (xV + xCR(i%), yV1 + n), 9, 15 'ALWAYS KEEP THE PAINT BOUNDARY THE SAME COLOR AS CIRCLE'S
'CIRCLE (xV - xCR(i%), yV1 + n), 2, 10 '.....ACCIDENTAL DOUBLE HELIX(mirror)= KEEP
'*****
'GRAPH to the Left of eb__Waveform Lines to the LEFT SIDE Y-VALUES ONLY *****
'Waveform LEFT Lines of Y-VALUES ONLY:Centre Line = xCenter & yCrosshair1 *****
'*****
Line (xH + n - 370, yL(i%) + d)-(xH + n - 370, yCrosshair1 + d), c'....Left Y*****
circle (xH + n - 370, yL(i%) + d), 2, 15'.....Left Y*****
paint (xH + n - 370, yL(i%) + d), 2, 15'.....Left Y*****
'*****
'GRAPH to the RIGHT of eb__Waveform Lines to the RIGHT SIDE Y-VALUES ONLY *****
'Waveform RIGHT Lines of Y-VALUES ONLY:Centre Line = xCenter & yCrosshair1 *****
'*****
Line (xH + n + 70, yR(i%) + d)-(xH + n + 70, yCrosshair1 + d), c + 1'.Right Y*****
circle (xH + n + 70, yR(i%) + d), 2, 15'.....Right Y*****
paint (xH + n + 70, yR(i%) + d), 2, 15'.....Right Y*****
'*****
'To see energy differential X-to the LEFT minus X-to the RIGHT*****
'OR BETTER DESCRIBED AS THE SINE WAVE RESULTANT *****
'*****
circle (xV - (xCL(i%) - xCR(i%)), yV1 + n), 1.2, 15'same color outside circ's*****
'*****
'*****
```

'*****
'*****

'NOTE: On this day the 8th of February 2004 , eventually after many months
' of staring at this waveform screen, i noticed the slight discrepancy
' in the shape of the two Twine waveforms, both in the x_graphs and
' more pronounced in the y_graphs, especially at their beginning and
' endpoints. The word discrepancy came to mind since one would expect
' that exactly the same graph values will be generated for each
' side even if it is in a reverse mirror fashion. A mathematical
' miscalculation was suspected, but on considering the fact that
' everything done for the one side was exactly done so for the other
' side only two possibilities are left to explain the imbalance.
' no.1) It may be the crank Circle's PI value that causes this
' unexpected lopsidedness in the display; not as an error
' since it is equally applied on both sides but rather as
' introducing the so-called chaos concept into the rather
' simple geometry equations. Thus the display of unbalanced
' Twine waveforms may be a true reflection of the EB,
' there being no synchronized balancing out of the momentum.
' OR.....
' no.2) Or a correcting value or value's may be needed to balance out
' or bring one graph to an exact reversed mirror image of

the other. However ; what or how this value can be, may prove elusive to find since the crank Circle's introduction of chaos may not by it's very nature be predictable. This unpredictability in the sequence of PI , will of course contribute to the elusiveness of getting some formulae to match up the two Twine waveforms.

NOTE : 24 May 2004 :

After analyzing three possibly wave combinations of the Eb in a drafting program ,i established that there are indeed no wave shape discrepancy at all as speculated above ; nor are there any miscalculation . The answer is much simpler.

It was found that the waves are indeed "exactly" reproduced on the one side of the Eb as on the other; the one wave being a horizontally as well as vertically flipped version of the other with this critical distinction :- it is 1/24th of a phase out of step with the wave on the other side of the Eb. The reason why it is described as "exactly" between brackets is because the one wave leads by 1/24th of a graph value and thus a visual discrepancy will be seen if you compare the waves in their natural setting without making a shift to accommodate for the phase adjustment.

In summation it should be noted that the phase shift is REAL, being part of the physical property of attaching a square to a Circle's edge WHILE THE CIRCLE ROTATE.

Summation:

The programming code instructions above result in a sine graph instead of the two Twine waves canceling each other out.

(THE NUMERICAL VALUE OF ONE GRAPH IS SUBTRACTED FROM THE OTHER GRAPH)

This is because the waves are reverse exact mirror images of each other permanently at 1/24th out of phase. One would instinctively expect the system of the EB's two weights to have a canceling out effect on each other as if the system was "balanced" as may be the Case with a conventional pendulum plot.

The result of two Twine waves belonging to the same system and made to interfere with each other is then not a zero result but a "subduing" of the energy contained in the two systems and expressing it as an exact sine graph as the resultant form.

Conclusion:

If a Twine wave can be described as a Sine wave with it's energy more compacted up to one side of it's frequency cycle; then a sine wave can alternatively be DESCRIBED as TWO Twine waves with identical qualities but with this critical "Relationship" between them ; One of the waves is a REVERSED MIRROR of the other wave and 1/24th out of phase.

The twine forms are actually much more varied in shape than the 'just a bunching up on the one side' discription would indicate.

It has a easily predictable mathematical shapes linked to the relationship of a square to a circle.

A electromagnetic transmission somehow emulating this principle using two closely tied up "photons" will then (to any interceptor of such a transmission without the decoppling reciever) only detect a single frequency of an unchanging nature. A "Twinewave decoder" will of course see a whole alphabet of waveforms carrying info.

Postulate:

If the structure of space is fundamentally structured so as to propagate moving particle structures in waveforms as Twine, with an identical mating particle that is moving closely to it in a reverse mirror fashion ; 1/24th out of a cycle of phase ; then the "cancellation" result will be a sine waveform.

Thus an energy subduing effect may be present in the universe since the resulting Sine wave will carry less "punch" so to speak. If the seemingly singly particle can be split however , then the Twine relationship become untangled and the real energy that the single particle's carry on their own will come to the fore as two separate particles that move with a Soliton waveform pattern without easily stopping.

Now :

If an elementary particle such as the photon were in fact to be two

closely coupled particles (as described above), then the energy of each half particle of a "split" photon would be greater than the full subduced particle when mated with it's reversed/mirror partner. Splitting the photon may be achieved by the collapsing sound bubble that has already been observed to achieve small burst of high energy.

How :

By directing a stream of photons through a lens and having it's focus intercept with a sound pulsing bubble in clear water or other suitable substance , the result may be that the rapid collapse of the bubble may force some of the the photons in the focus area to split. This may release two separated single particle's with more energy perhaps explaining the already observed small burst of high energy from sound bubbles perhaps inter acting with stray photons as well as the possibility of increasing our understanding of photosynthesis greater efficiency than what we can attain with our present day solar cells.

The sound bubble can be kept stationary within a centrifuge of a wafer flat design (to avoid the harmonic warping of a long thin centrifuge design which would make it difficult to focus the photon stream on the Sound bubble.) A multiwafer design stacked on each other with liquid filled gaps in between (to capture the desired heat release)with a single source laser photon focus beam pulsating it's pricisely aimed focus through the transparent wafer and liquid with heat carried 1st from the bottom of the stack and then to the top would be my second design test setup.(After testing this theory on a single double glass rotating wafer first of course.) (Sound's like a description of the sci-fi warp drive in Star Trek...ha.ha.ha)

Expectations

If the first experiment produce more energy then is required to run the whole Laser / Centrifuge / Liquid Pumps setup ;-then there would be a case to be made concerning this double particle idea. Now this case does not just refer to the abovementioned energy production only but to the implications such a proof would have about our fundamental understanding of physics. Proof of double particle activity would further the notion that the Dimensional / SYMMETRY structure of space is slanted.(See The Writing : ON MOTION AND MORE) More on that later. One thing at a time !!!!!!!

Let n = n + st 'Do NOT move from this position (INCREMENTING n SubSCRIPT)*****
TEXT AT left BOTTOM OF SCREEN ON top of PASTEL BLUE BOX **

Line (13,949)-(625,959),&h00050,bf'.....BOTTOM LEFT BOX FILL
Line (250,989)-(625,999),&h00051,bf'.....BOX FILL NEXT TO DIST1 MIN & MAX PRINT BELOW
Line (13,999)-(625,1005),&h00052,bf'.....BOTTOMMOST BOX FILL
Draw String (17, 950), "Comparing Waveform's @ left with right:The Waveforms can never be in phase.", 0
'*****
Line (13,959)-(625,969),&h00050,bf'*****
Draw String (17, 960), "The shapes are not Sinewaves but fit the Soliton waveform's description", 0
'*****
Line (13,969)-(625,979),&h00050,bf'*****
Draw String (17, 970), "with it's hump shape. See Wave shapes Near Max. & Min. of Pivot (Dist1)", 0
'*****
Line (13,979)-(625,989),&h00051,bf'*****
Draw String (17, 980), "to Crank Centre", 0'*****
'*****
Line (13,989)-(250,999),&h00008,bf'*****
Draw String (17 , 990), "Max Dist1 =110 & Min Dist1=70", 15 '*****
'*****
'*****

'NOTE ABOUT MATH OF SVASTIKA SYMBOL.....
draw String (xCenterA -318, 880), "PROOF of this TwineWave Principle is best done Manually with a CAD Program or", 15
draw String (xCenterA -318, 890), " by hand drawing. THE Svastika sign's Mathematical CALC POINT center is the key", 15
draw String (xCenterA -318, 900), " from which real co-oords are calculated in the EB Program. The Svastika are", 15
draw String (xCenterA -318, 910), " revealed NOT as Mystical but with ONLY a PURE GEOMETRICAL/MATHEMATICAL meaning.", 15
'*****
'*****
'DISCLAIMER 01 TEXT AT BOTTOM OF SCREEN IN GREY BOX *****
'*****
Draw String (xCenterA -318 , 970),"DISCLAIMER 01: NO glorification of this well known BABILONIAN symbol are", 15


```

End If
'*****
'*****
i% = i% + 1 '.....DO NOT MOVE THE MAIN FOR NEXT SUBSCRIPT INCREMENT FROM THIS POSITION *****
'*****
'*****
'LITTLE CIRCLES POINTING PAST MATHCORE : ATTENTION : LINKING Peaucellier's Linkage COMMENT WITH EB Linkage *****
circle (622,130+SC),2,15:paint (622,130+SC),&h000059,15'.LITTLE CIRCLES DOWN THE MIDDLE
SC = SC+10
If SC = 450 Then
circle (620,580),2,15:paint (620,580),&h000059,15'.LITTLE CIRCLES AT THE BOTTOM TO Curve
'Line (620,580)-(615,590),c
circle (615,590),2,15:paint (615,590),&h000059,15'.LITTLE CIRCLES AT THE BOTTOM TO Curve
'Line (615,590)-(610,600),c
circle (610,600),2,15:paint (610,600),&h000059,15'.LITTLE CIRCLES AT THE BOTTOM TO Curve
Else
End If
If SC = 450 Then
SC = 0
Else
End If
'*****
'*****
" TAKEN FROM FONT.BAS EXAMPLE *****
"Define character range *****
Const FIRSTCHAR = 32 , LASTCHAR = 127 '*****
Const NUMCHARS = (LASTCHAR - FIRSTCHAR)+1 '*****
Dim As UByte ptr p, myFont '*****
dim i As Integer'*****
"Create custom font into PUT buffer *****
myFont = ImageCreate(NUMCHARS * 12, 9)'*****
"Put font header at start of pixel data *****
#ifdef ImageInfo " older versions of FB don't have the ImageInfo feature *****
p = myFont + iif(myFont[0] = 7, 32, 4)' This only apply to lower than FB 0.20.0 versions.*****
#else *****
ImageInfo( myFont, , , , p )' This will apply from FB 0.20.0 and later versions ?'*****
#endif'*****
p[0] = 0 '*****
p[1] = FIRSTCHAR'*****
p[2] = LASTCHAR '*****
"PUT each character into the font and update width information *****
For i = FIRSTCHAR to LASTCHAR *****
"Here we could define a custom width for each Letter, but for simplicity we use *****
"a fixed width of 8 since we are reusing the default font glyphs *****
p[3 + i - FIRSTCHAR] = 8 *****
" Create character onto custom font buffer by Drawing using default font *****
Draw String myFont, ((i - FIRSTCHAR) * 8 , 1), Chr(i),32 + (i Mod 24) + 24 '*****
Next i *****
" Now the font buffer is ready; we could save it using BSAVE for later use *****
Rem bsave "myfont.bmp", myFont *****
" Here we Use Draw string using the custom font '*****
'*****
draw String (xCenterA -317, 920), "At a Dist1 value close to maximum or minimum , a distortion can be seen on",0
draw String (xCenterA -317, 930), "the 90 degree alignment of the lines crossing from the 4 corner's of the Square.",8
draw String (xCenterA -317, 940), "This is due to the screen pixel ratio that is more easily noticed when the OVAL",0
draw String (xCenterA -317, 950), "shape the rotation actually follow on screen become clear. Also note a small",8
draw String (xCenterA -317, 960), "SineWave discrepency in shape due to rounding off to integer value for co-ords.",0
line(418,398)-(617,460),8,Bf'Background box For Purpose Text Box
line(418,398)-(617,460),15,B'Rim around Background for Purpose Text Box
Draw string (427,405),"FOR PURPOSE OF EB READ",,,myFONT
draw string (428,406),"FOR PURPOSE OF EB READ",,15
Draw string (427,420),"COMMENT IN SOURCE CODE",,myFONT
Draw string (428,421),"COMMENT IN SOURCE CODE",,15
Draw string (427,437)," FROM THE Line ABOUT :",,myFONT
Draw string (428,449)," 8th of February 2004",,myFONT
" Free the font from memory, now we are done with it *****
ImageDestroy myFont *****
"*****
***** SETTING UP THE RIGHT SIDE EB's GRAPH BACKGROUND SQUARES ( Drawing it complete in one go )
*****
For r = 1 to 24
Line (xCenterA -300,568 + Rgraph)-(xCenterA +300 , 568 + Rgraph),&h000051'.....Y-spacing for Right Side EB Graph's HORIZONTAL Grid Lines
Line (xCenterA+ Rgraph+24,568)-(xCenterA+ Rgraph+24 ,844),&h000051'...X-spacing for Right Side EB Graph's VERTICAL TO THE RIGHT OF
CENTRE Line
line (xCenterA- Rgraph-24,568)-(xCenterA- Rgraph-24 ,844),&h000051'...X-spacing for Right Side EB Graph's VERTICAL TO THE LEFT OF CENTRE

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Line      Rgraph = Rgraph + 12
          If Rgraph = 288 Then
              Rgraph = 0
          End If
Next r
"***** LEFT SIDE GRAPH BACKGROUND SQUARES
/'
For r = 1 to 24
    Line (xCenter1 -400,568 + Rgraph)-(xCenter1 +400 , 568 + Rgraph),&h000051'.....Y-spacing for Right Side EB Graph's HORIZONTAL Grid LineS
    Line (xCenter1+ Rgraph+24,568)-(xCenter1+ Rgraph+24 ,844),&h000051'...X-spacing for Right Side EB Graph's VERTICAL TO THE RIGHT OF CENTRE
Line      line (xCenter1- Rgraph-24,568)-(xCenter1- Rgraph-24 ,844),&h000051'...X-spacing for Right Side EB Graph's VERTICAL TO THE LEFT  OF CENTRE
Line
          Rgraph = Rgraph + 12
          If Rgraph = 288 Then
              Rgraph = 0
          End If
Next r
/'
*****
*****
*****
*****
draw string (xCenterA +285, 568),"01",15 :draw string (xCenterA -35, 568),str((xLA(1)-xCenterA)),0:draw string (xCenterA + 10, 568),str((xRA(1)-xCenterA)),0
draw string (xCenterA -297, 580),"02",15 :draw string (xCenterA -35, 580),str((xLA(2)-xCenterA)),0:draw string (xCenterA + 10, 580),str((xRA(2)-xCenterA)),0
draw string (xCenterA +285, 592),"03",15 :draw string (xCenterA -35, 592),str((xLA(3)-xCenterA)),0:draw string (xCenterA + 10, 592),str((xRA(3)-xCenterA)),0
draw string (xCenterA -297, 604),"04",15 :draw string (xCenterA -35, 604),str((xLA(4)-xCenterA)),0:draw string (xCenterA + 10, 604),str((xRA(4)-xCenterA)),0
draw string (xCenterA +285, 616),"05",15 :draw string (xCenterA -35, 616),str((xLA(5)-xCenterA)),0:draw string (xCenterA + 10, 616),str((xRA(5)-xCenterA)),0
draw string (xCenterA -297, 628),"06",15 :draw string (xCenterA -35, 628),str((xLA(6)-xCenterA)),0:draw string (xCenterA + 10, 628),str((xRA(6)-xCenterA)),0
draw string (xCenterA +285, 640),"07",15 :draw string (xCenterA -35, 640),str((xLA(7)-xCenterA)),0:draw string (xCenterA + 10, 640),str((xRA(7)-xCenterA)),0
draw string (xCenterA -297, 652),"08",15 :draw string (xCenterA -35, 652),str((xLA(8)-xCenterA)),0:draw string (xCenterA + 10, 652),str((xRA(8)-xCenterA)),0
draw string (xCenterA +285, 664),"09",15 :draw string (xCenterA -35, 664),str((xLA(9)-xCenterA)),0:draw string (xCenterA + 10, 664),str((xRA(9)-xCenterA)),0
draw string (xCenterA -297, 676),"10",15 :draw string (xCenterA -35, 676),str((xLA(10)-xCenterA)),0:draw string (xCenterA + 10, 676),str((xRA(10)-
xCenterA)),0
draw string (xCenterA +285, 688),"11",15 :draw string (xCenterA -35, 688),str((xLA(11)-xCenterA)),0:draw string (xCenterA + 10, 688),str((xRA(11)-
xCenterA)),0
draw string (xCenterA -297, 700),"12",15 :draw string (xCenterA -35, 700),str((xLA(12)-xCenterA)),0:draw string (xCenterA + 10, 700),str((xRA(12)-
xCenterA)),0
draw string (xCenterA +285, 712),"13",15 :draw string (xCenterA -35, 712),str((xLA(13)-xCenterA)),0:draw string (xCenterA + 10, 712),str((xRA(13)-
xCenterA)),0
draw string (xCenterA -297, 724),"14",15 :draw string (xCenterA -35, 724),str((xLA(14)-xCenterA)),0:draw string (xCenterA + 10, 724),str((xRA(14)-
xCenterA)),0
draw string (xCenterA +285, 736),"15",15 :draw string (xCenterA -35, 736),str((xLA(15)-xCenterA)),0:draw string (xCenterA + 10, 736),str((xRA(15)-
xCenterA)),0
draw string (xCenterA -297, 748),"16",15 :draw string (xCenterA -35, 748),str((xLA(16)-xCenterA)),0:draw string (xCenterA + 10, 748),str((xRA(16)-
xCenterA)),0
draw string (xCenterA +285, 760),"17",15 :draw string (xCenterA -35, 760),str((xLA(17)-xCenterA)),0:draw string (xCenterA + 10, 760),str((xRA(17)-
xCenterA)),0
draw string (xCenterA -297, 772),"18",15 :draw string (xCenterA -35, 772),str((xLA(18)-xCenterA)),0:draw string (xCenterA + 10, 772),str((xRA(18)-
xCenterA)),0
draw string (xCenterA +285, 784),"19",15 :draw string (xCenterA -35, 784),str((xLA(19)-xCenterA)),0:draw string (xCenterA + 10, 784),str((xRA(19)-
xCenterA)),0
draw string (xCenterA -297, 796),"20",15 :draw string (xCenterA -35, 796),str((xLA(20)-xCenterA)),0:draw string (xCenterA + 10, 796),str((xRA(20)-
xCenterA)),0
draw string (xCenterA +285, 808),"21",15 :draw string (xCenterA -35, 808),str((xLA(21)-xCenterA)),0:draw string (xCenterA + 10, 808),str((xRA(21)-
xCenterA)),0
draw string (xCenterA -297, 820),"22",15 :draw string (xCenterA -35, 820),str((xLA(22)-xCenterA)),0:draw string (xCenterA + 10, 820),str((xRA(22)-
xCenterA)),0
draw string (xCenterA +285, 832),"23",15 :draw string (xCenterA -35, 832),str((xLA(23)-xCenterA)),0:draw string (xCenterA + 10, 832),str((xRA(23)-
xCenterA)),0
draw string (xCenterA -297, 844),"24",15 :draw string (xCenterA -35, 844),str((xLA(24)-xCenterA)),0:draw string (xCenterA + 10, 844),str((xRA(24)-
xCenterA)),0
Draw string (xCenterA +118, 555),"RIGHT SIDE TWINE WAVE",15
Draw string (xCenterA -300, 555),"LEFT SIDE TWINE WAVE",15
draw string (xCenterA -85, 555),"RESULTANT = SINEWAVE ",15
Draw string (xCenterA -300, 865),"SUBTRACT LEFT TwineWave FROM RIGHT TwineWave X-Co-ord = SINEWAVE Remainder",15
Draw string (xCenterA +118, 495),"NOTE the 1/24th PHASE",15
Draw string (xCenterA +118, 505),"DIFFERENCE:- Flip One",15
Draw string (xCenterA +118, 515),"TWINE Wave Vertically",15
Draw string (xCenterA +118, 525),"and Horizontally to see",15
Draw string (xCenterA +118, 535),"an overlay comparison.",15
Draw string (xCenterA +118, 545),"To Prove Use CAD Prgm.",15
Draw string (xCenterA -300, 495),"The 'Sudden' direction",15
Draw string (xCenterA -300, 505),"changes in one Twine",15

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Draw string (xCenterA -300, 515),"are exactly matched to",15
Draw string (xCenterA -300, 525),"the other Twine Wave",15
Draw string (xCenterA -300, 535),"when one is H/V-flipped",15
draw string (xCenterA -300, 545),"& 1/24th phase shifted",15

loop Until inkey\$ = Chr\$(27)
End