

# Biorhythm 'Cycles'

Do the following using your graphing calculator.

Answer: Today's date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Your birthday: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
month day year month day year

I. Preliminary Setup: 1) [MODE]: Be in **Radians** not Degrees!

2) [Window/Range]: Xmin and Xmax to be determined below; Xscl =1000; Ymin = -2; Ymax = 2; Yscl = 1  
Calculate the number of days *you* have been alive which will be the Xmin value for the [Window/Range]:

a) Multiply your age in years by 365, plus extra days due to leap years (1996, '92, '88, '84, '80 if born before Feb. 29), plus # of days since your last birthday plus 1 (the actual birthday).

Note: For people between 15 and 19 years old the answer should be between 5500 and 7500.

Note: The answer you get is the value needed for the Xmin value in the [Window/Range]. This value represents the number of days you have been alive, to this day, therefore it can not be a negative number.

b) Find the Xmax value needed for the [Window/Range]:

i) For the TI81 add to the answer from 2a) 38

ii) For the TI82 and TI83 add to the answer from 2a) 37.6

iii) For the TI85 and TI86 add to the answer from 2a) 42

Note: This value from i), ii), or iii) is the Xmax value and makes a friendly Window/Range when TRACING.

Note: From Xmin to Xmax represents the next month of your life.

c) **Complete:** Your Xmin: \_\_\_\_\_ Your Xmax: \_\_\_\_\_

Be sure to use a positive number for both Xmin and Xmax.

3) [Y=]:  $Y_1 = \sin(B)x$  where 'B' will be determined below.

ex.1) If period is  $9\pi$  then  $Y_1 = \sin(B)x = 9\pi$  or  $B = (2\pi)/(9\pi)$  or  $B = \frac{2}{9}$  therefore  $Y_1 = \sin\left(\frac{2}{9}\right)x$  or TI83:  $\sin\left(\left(\frac{2}{9}\right)x\right)$

ex.2) If period is 9 then  $Y_1 = \sin(B)x : (2\pi) = 9$  or  $*B = (2\pi)/(9)$  therefore  $Y_1 = \sin\left(\frac{2\pi}{9}\right)x$  or TI83:  $Y_1 = \sin\left(\left(\frac{2\pi}{9}\right)x\right)$

a) Enter in  $Y_1 =$  the *Physical Cycle* which is the sine function having

i) an amplitude of 1, ii) a phase shift of 0, and \*iii) a period of 23 (days).

\*Note: Use  $2\pi$  in the calculations and the answer (see ex.2 above) and be sure to include the x.

b) Enter in  $Y_2 =$  the *Emotional Cycle* which is the sine function having

i) an amplitude of 1, ii) a phase shift of 0, and \*iii) a period of 28 (days) and be sure to include the x.

\*Note: Use  $2\pi$  in the calculations and the answer (see ex.2 above).

c) Enter in  $Y_3 =$  the *Intellectual Cycle* which is the sine function having

i) an amplitude of 1, ii) a phase shift of 0, and \*iii) a period of 33 (days) and be sure to include the x.

\*Note: Use  $2\pi$  in the calculations and the answer (see ex.2 above).

II. Use *your* Xmin and Xmax values from the previous page and do the following

1) Graph  $Y_1$  on your calculator

2) Sketch your  $Y_1$  graph below for the *Physical Cycle* labeling the x values rounded to the nearest day

a) where it crosses the x-axis, and

b) at the high and low points on the graph (Hint: Use the TRACE key.)

Best: 1 -



\_\_\_\_\_ days

Worst: -1 -

Xmin  
(Edge of Screen)

