

CHAPTER 10 - MODELLING USING SINE FUNCTIONS

TI-84 Plus

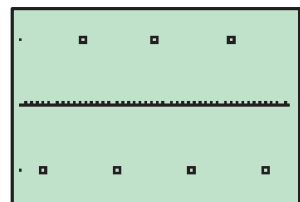
Step 1 Enter the times in hours after midnight into **L1** and the corresponding tide levels (−1 for low tide and 1 for high tide) into **L2**.

L1	L2	L3	3
6.77	-1		
13.3	1		
19.22	-1		
25.52	1		
31.5	-1		
38.15	1		
43.95	-1		

Step 2 Press **2nd** **Y=** (STAT PLOT) **1** and ensure **Plot1** is set up as shown.

Plot1	Plot2	Plot3
On	Off	Off
Type:		
Xlist:	L1	
Ylist:	L2	
Mark:		

Step 3 Press **ZOOM** **9:ZoomStat** to draw the graph.



Step 4 Press **STAT** **►** to select the **STAT CALC** menu, then select **C:SinReg**.

EDIT	TESTS
7:QuartReg	
8:LinReg(a+bx)	
9:LnReg	
0:ExpReg	
A:PwrReg	
B:Logistic	
C:SinReg	

Step 5 The syntax of the **SinReg** command is *SinReg(iterations, x data, y data, period guess, y variable)*.

Press **10** **,** **2nd** **1** (**L1**) **,** **2nd** **2** (**L2**) **,** **12** **,** **VAR** **►** to select the **Y-VARS** menu, then **1** to select **1:Function**, then **1** to select **1:Y1**.

SinReg	10,L1,L2,
	12,Y1

Step 6 Press **ENTER** to find the equation of the sine model.

Press **MODE** and ensure the calculator is in **radian** mode.

SinReg
y=a*sin(bx+c)+d
a=1.004460737
b=.5072060653
c=1.157614128
d=-.0025713704

Step 7 Press **ZOOM** **9:ZoomStat** to plot the sine curve over the data.

