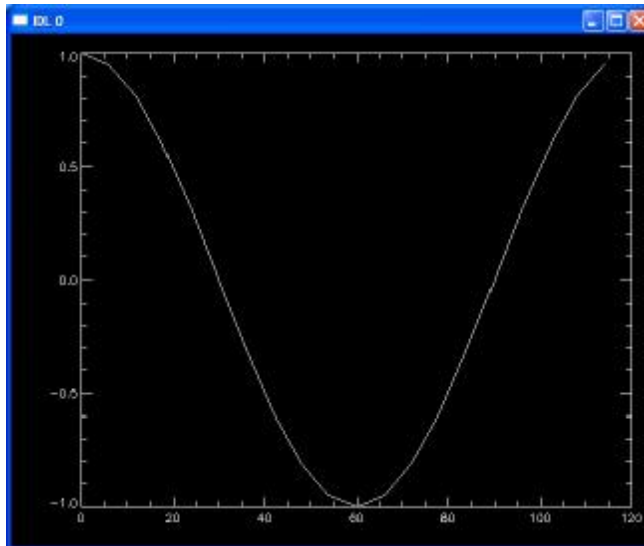


```

; Cosine Curve
; Reproduces R problem from
; http://research.stowers-institute.org/efg/2005/LombScargle/R/cosine.pdf
; R looked at a narrower range of test frequencies (based on biology of problem).
N = 20
tDelta = 6.0
t = indgen(N) * tDelta
period = 120.0
frequency = 1/period
h = cos(2*!pi*frequency*t)
plot,t,h

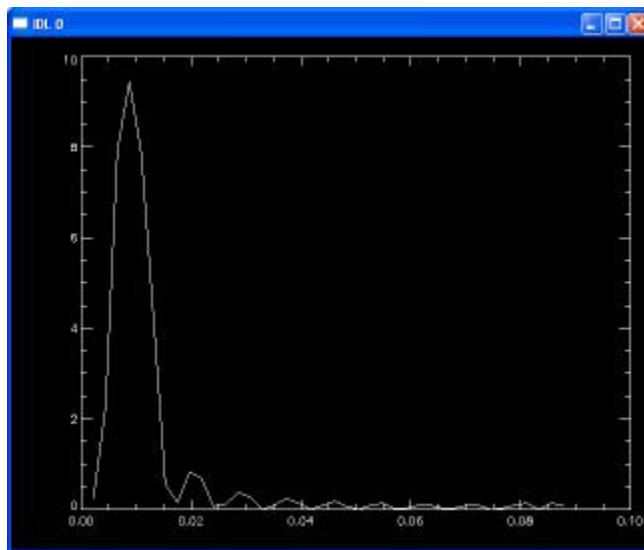
```



```

result = LNP_TEST(t, h, WK1=Frequencies, WK2=Periodogram, JMAX=PeakIndex)
print, result
IF (result[1] LT 0.05) $
THEN BEGIN
  PRINT, 'Signal has periodicity'
  PRINT, 'Significant period at', 1/Frequencies[PeakIndex], ' minutes'
ENDIF ELSE BEGIN
  PRINT, 'Signal is mostly noise'
ENDELSE
PLOT, Frequencies, Periodogram

```



DL> print, result

**9.43862 0.00159181** *peak of periodogram and corresponding p-value*

IDL> PRINT, 'Signal has periodicity'

**Signal has periodicity**

IDL> PRINT, 'Significant period at', 1/Frequencies[PeakIndex], ' minutes'

**Significant period at 114.000 minutes**