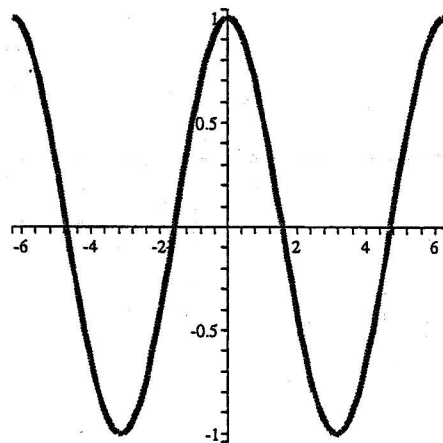


Math 155 - Identifying Oscillating Functions

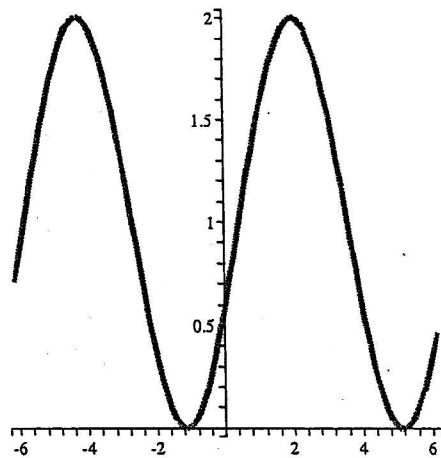
The usual cosine function  $f(t) = \cos(t)$ .



Amplitude  $B = 1$   
Average  $A = 0$   
Period  $T = 2\pi$   
Phase  $\phi = 0$

$$f(t) = A + B \cos\left(\frac{2\pi}{T}(t - \phi)\right) = \cos(t)$$

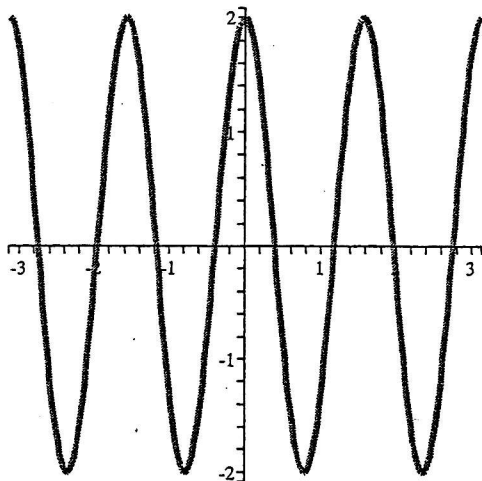
A cosine function that has been shifted horizontally and vertically.



Amplitude  $B = 1$   
Average  $A =$   
Period  $T = 2\pi$   
Phase  $\phi =$

$$f(t) = A + B \cos\left(\frac{2\pi}{T}(t - \phi)\right) =$$

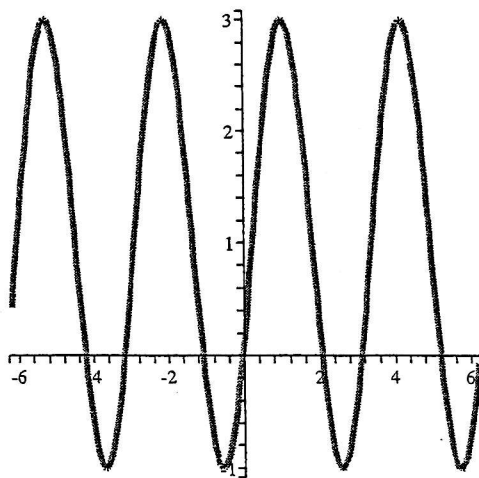
A cosine function that has been scaled horizontally and vertically.



Amplitude  $B =$   
 Average  $A = 0$   
 Period  $T =$   
 Phase  $\phi = 0$

$$f(t) = A + B \cos\left(\frac{2\pi}{T}(t - \phi)\right) =$$

A cosine function that has been both shifted and scaled.



Amplitude  $B =$   
 Average  $A =$   
 Period  $T =$   
 Phase  $\phi =$

$$f(t) = A + B \cos\left(\frac{2\pi}{T}(t - \phi)\right) =$$