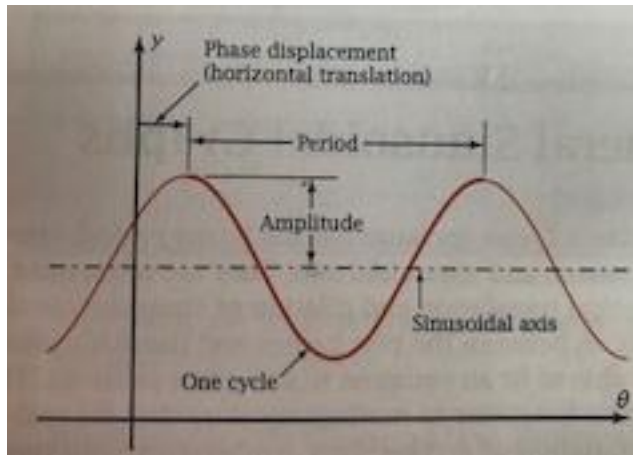


Section 3-1 Sinusoids: Amplitude, Period, Phase Displacement and Cycle



$$y = \cos x$$

x	0	90	180	270	360
y					

- This one **cycle** of cosine is called the Parent Function
- The **amplitude** is 1 (height)
- The **period** is  $360^\circ$

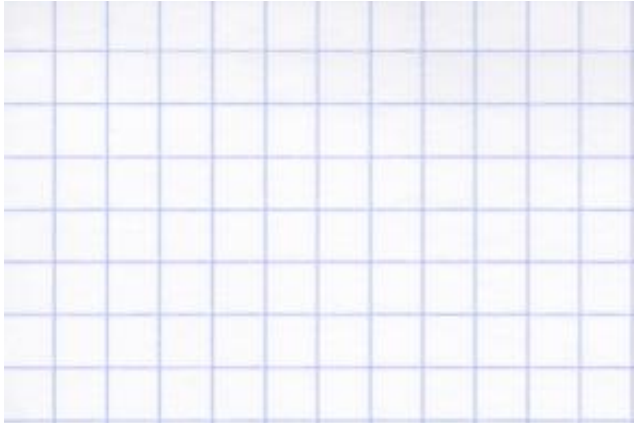


1. Plot the graph of  $y = 5\cos\theta$   
What is the amplitude?



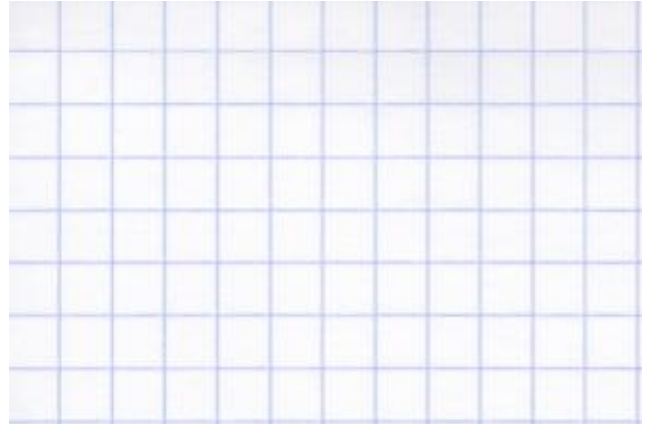
2. Graph  $y = \cos 2\theta$

What is the period?



3. Graph  $y = \cos(\theta - 90^\circ)$

What transformation was caused by  $90^\circ$ ?  
**Phase Displacement** is the value of  $\theta$  that makes argument equal 0.



4.  $y = 2 + \cos \theta$

What transformation is caused by the 2?

The **sinusoidal axis** runs along the middle of the graph of a sinusoid.



5.  $y = 6 + 5\cos 3(\theta - 60^\circ)$

- Amplitude
- Period
- Phase displacement
- Sinusoidal axis location