

2.1 Amplitude & Period

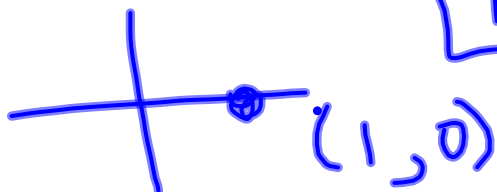
~~Warm Up Tuesday~~

Find the exact value.

1. $\sin \frac{5\pi}{6} = \boxed{\frac{1}{2}}$



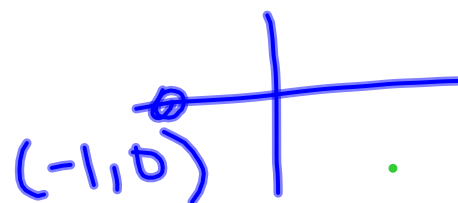
2. $\cos 0 = \boxed{1}$



3. $\sin \frac{\pi}{2} = \boxed{1}$



4. $\cos \pi = \boxed{-1}$



~~About Me:~~

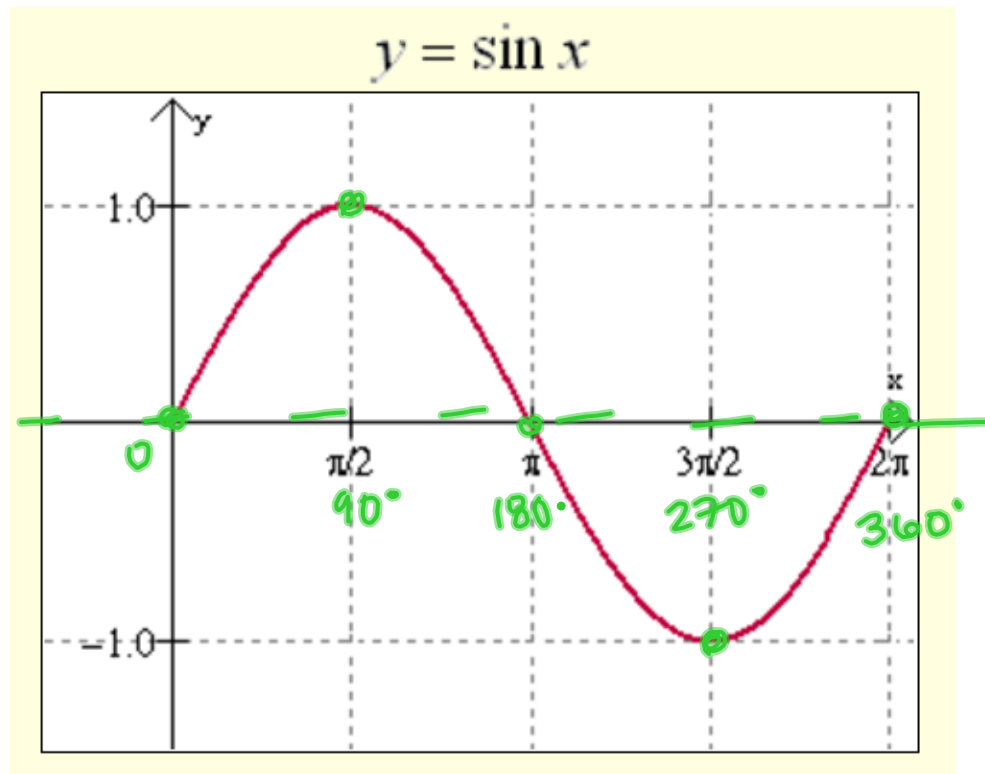
1. How do you usually spend your time after school?
2. Would you rather always be too young or too old?

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

Sine Parent Function

<https://www.desmos.com/calculator/zq2ap5wctn>

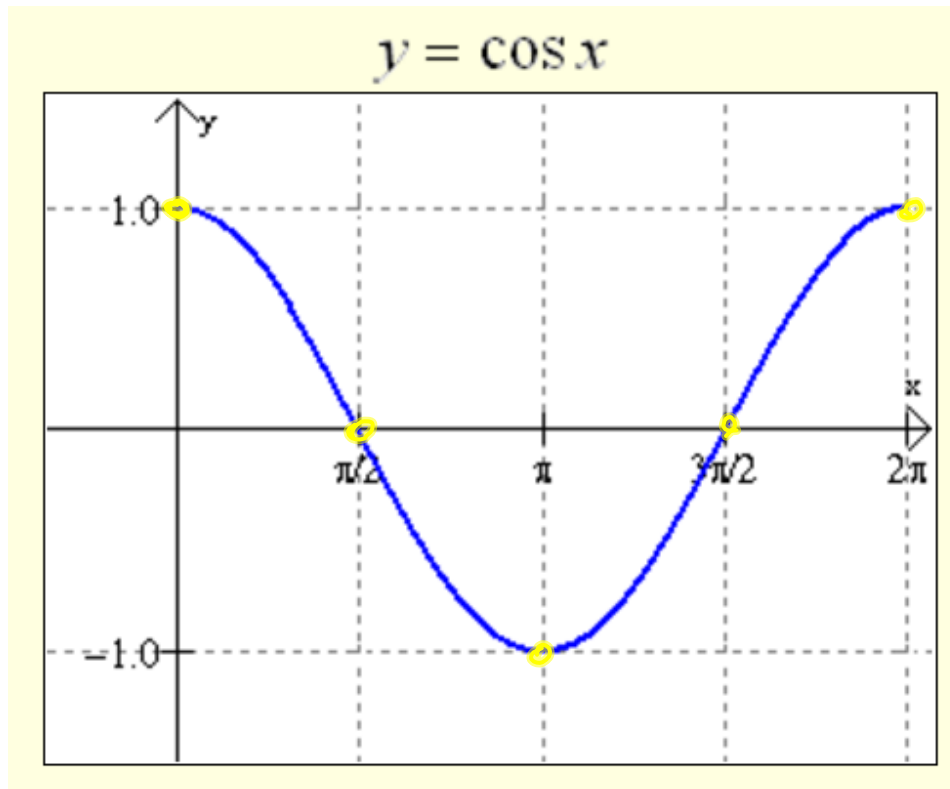


sine starts
@²
middle

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

Cosine Parent Function



cosine
starts @
top

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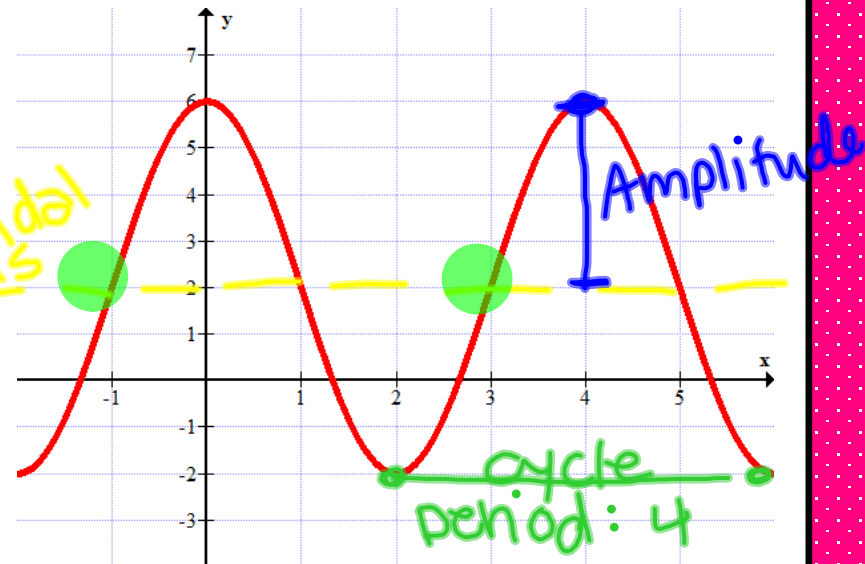
Sinusoidal Axis:

The midline of a sine or cosine wave

Amplitude: positive

Distance from the sinusoidal axis to the top or bottom of the graph

sinusoidal axis



Cycle: top to top

Section of a graph before it repeats

1 cycle \rightarrow 5 pts
2 cycles \rightarrow 9 pts

Period:

Number of degrees or radians to complete a cycle
(Normally 2π radians or 360°)

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

<https://www.desmos.com/calculator/xj0syxnnop>

$$y = A \sin B\theta$$

↑
Amplitude

↑
changes
period

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

ex#1. Sketch 2 complete cycles. Label all critical points.

$$y = 4 \sin 6\theta \text{ (degrees)}$$

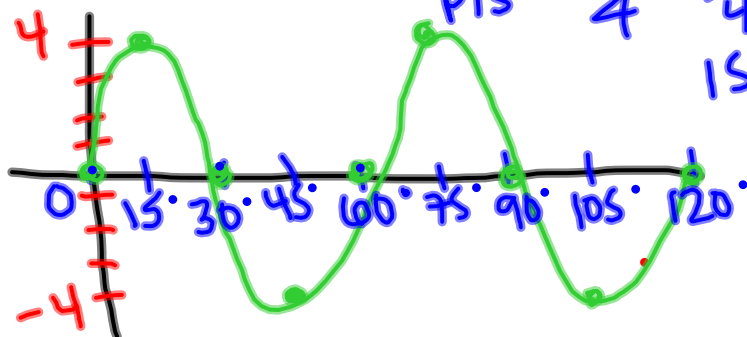
$$A: 4$$

$$B: 6$$

middle

$$\text{Period: } \frac{360}{6} = 60^\circ$$

$$\text{Critical Pts: } \frac{\text{Per}}{4} = \frac{60}{4} = 15^\circ$$



$$y = A \sin B\theta$$

To find amplitude...

coefficient of
sin or cos

To find period...

degrees

$$\frac{360}{B}$$

OR

radians

$$\frac{2\pi}{B}$$

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

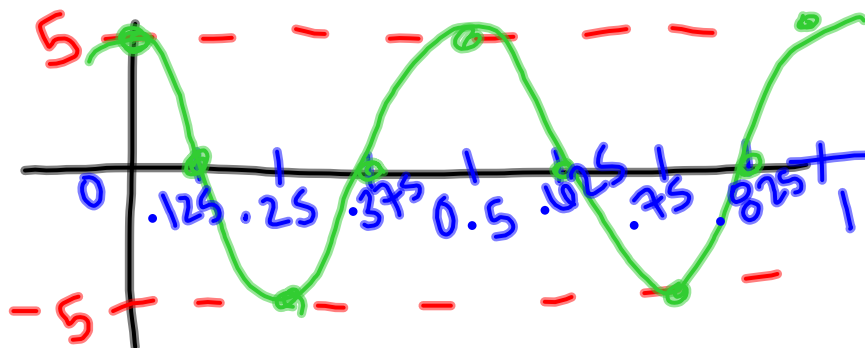
ex#2. Sketch 2 complete cycles. Label all critical points.

$$y = 5 \cos 4\pi(x) \quad (\text{radians})$$

A: 5 top Period: $\frac{2\pi}{4\pi} = \frac{1}{2} (0.5)$

B: 4π

K C F
 CP: $\frac{1}{2} \div 4$
 $\frac{1}{2} \cdot \frac{1}{4} = \frac{1}{8}$



2.1 Amplitude and Period

Name: _____

Sketch two complete cycles of each graph. Label all critical points.

1. $y = 3 \sin 5\theta$ (degrees)

2. $y = 12 \cos \frac{3}{4}\theta$ (degrees)

3. $y = 3 \sin \frac{\pi}{4}x$ (radians)

4. $y = 7 \cos 2x$ (radians)

5. $y = 20 \cos \frac{1}{3}x$ (radians)

6. $y = 5 \sin 4\pi x$ (radians)

7. $y = 8 \sin \frac{\pi}{5}x$ (radians)

8. $y = 10 \cos \frac{1}{6}x$ (radians)

2.1 Amplitude & Period

Essential Question: How do I graph a sine or cosine function?

~~Closing~~

You will receive either a graph or an equation. Find your match!!
On your weekly sheet, write down the LETTER & NUMBER of you and your partner's equation and graph.