

2 . 3 GENERAL SINUSOIDS

EQ : HOW do I graph a sine or cosine function?

WARM-UP WEDNESDAY

$$y = 7 + 4 \cos 3(\theta - 10^\circ)$$

A 1. AMPLITUDE: 4

2. B = 3

PERIOD: $\frac{360}{3} = 120^\circ$

use the equation to find the
following information

$$y = C + A \cos B(x - D)$$

C 3. SINUSOIDAL AXIS: 7

4. Phase shift: horizontal + 10 / right 10
starts at a... high

ABOUT ME :

1. If you could start any organization at RHS, what would it be?
2. What is your favorite current organization here?

#1, 2, 3, 4, 6

2.2 Vertical and Horizontal Shifts

Name: _____

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

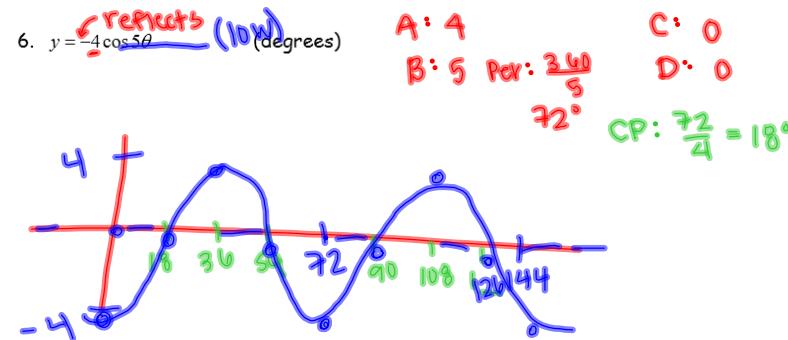
1. $y = 5 + \sin(x + 50^\circ)$ (degrees)

2. $y = -7 + \cos(\theta - 110^\circ)$ (degrees)

3. $y = 3 + \sin\left(\theta + \frac{\pi}{2}\right)$ (radians)

4. $y = -1 - \cos(\theta - \pi)$ (radians)

5. $y = 2 - \sin \theta$ (radians)



7. $y = 6 + 7 \sin x$ (radians)

8. $y = -5 \cos(x - 75^\circ)$ (degrees)

9. $y = 1 - \cos \frac{\pi}{6} x$ (radians)

2 . 3 GENERAL SINUSOIDS

EQ : HOW DO I GRAPH A SINE OR COSINE FUNCTION?

PUTTING IT ALL TOGETHER . .

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

State the domain and range of each graph.

$$y = C + A \sin B(x - D)$$

$$y = 3 + 5 \cos \frac{2}{3}(\theta - 150) \quad (\text{degrees})$$

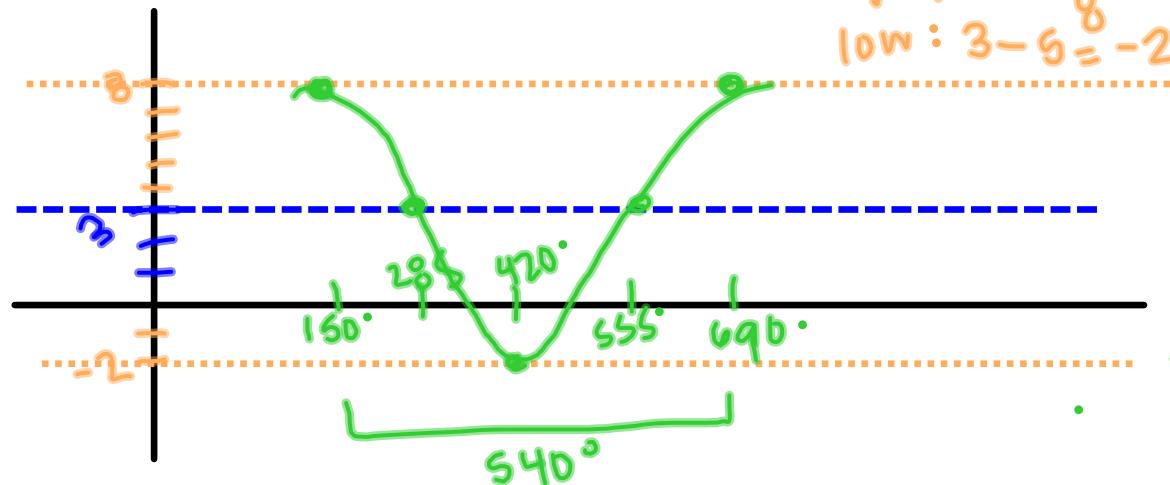
high pts: $3+5=8$
low: $3-5=-2$

C: 3
A: 5

B: $\frac{2}{3}$
Per:
 $360^\circ \div \frac{2}{3}$
 $\rightarrow 540^\circ$

D: 150
start @ high

CP: $\frac{540}{4}$
 135°



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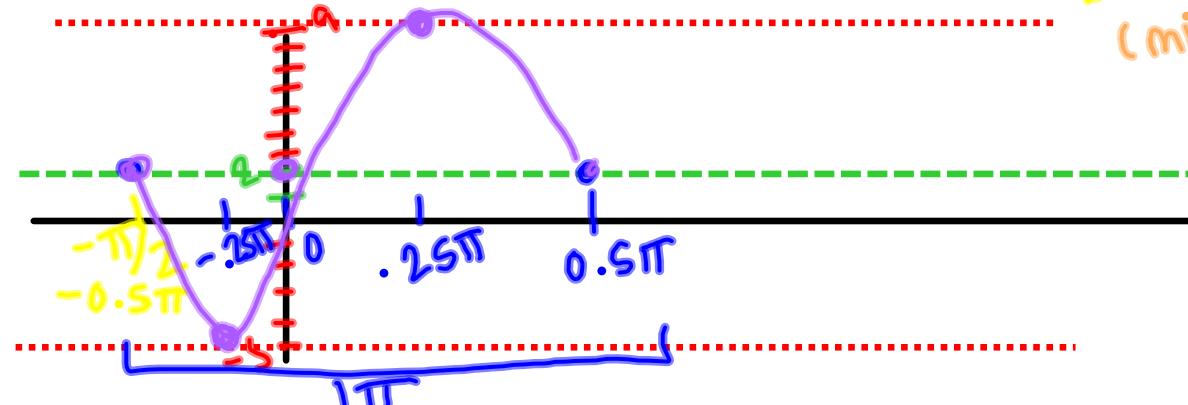
PUTTING IT ALL TOGETHER ..

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

State the domain and range of each graph.

$$y = 2 - 7 \sin 2 \left(x + \frac{\pi}{2} \right) \text{ (radians)}$$

A: 7 high: $2+7=9$
 C: 2 low: $2-7=-5$
 B: 2 Per: $\frac{\pi}{2} = \pi$
 D: $-\frac{\pi}{2}$ CP: $\frac{\pi}{4}$
 (middle) 0.25π



PICK 4

2.3 General Sinusoidal Graphs

Name: _____

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

~~Sketch two complete cycles of each graph.~~

1. $y = 7 + 4 \cos 3(\theta - 10^\circ)$ (degrees)

3. $y = 2 + 6 \sin \frac{\pi}{4}(x - 1)$ (radians)

2. $y = -3 + 5 \sin \frac{1}{2}(\theta + 200^\circ)$ (degrees)

4. $y = 23 + 30 \cos \frac{1}{5}(x - \pi)$ (radians)

$$5. \quad y = -1.11 + 1.45 \cos 10(\theta + 7^\circ) \quad (\text{degrees})$$

$$7. \quad y = 8 - 10 \sin 9(x + 15^\circ) \quad (\text{degrees})$$

$$6. \quad y = 15 - 2 \cos \frac{3}{2} \left(\theta + \frac{\pi}{2} \right) \quad (\text{radians})$$

$$8. \quad y = -2 + 5 \cos \frac{\pi}{15}(x + 5) \quad (\text{radians})$$

2 . 3

GENERAL SINUSOIDS

EQ :

HOW DO I GRAPH A SINE OR COSINE FUNCTION?

CLOSING

USE THE EQUATION TO FIND... $y = -2 + 3 \cos \frac{1}{2}(\theta - 40^\circ)$

- a. The highest point on the graph.
- b. The period of the graph.
- c. The sinusoidal axis.
(midline)

