2.2 More Graphing Trig

Essential Question: **How do I find the vertical shift and phase shift of a general sinusoidal function?**

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

A : Amplitude

B : $\frac{360}{B}$ OR $\frac{2\pi}{B}$ critical points : $\frac{Per}{4}$

period

Alg 2

C: vertical shift
- location of sinusoidal axis (middle pts)

D: Phase shift
- 1st point on x-axis

2.2 More Graphing Trig

Essential Question: How do I find the vertical shift and phase shift of a general sinusoidal function?

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

starts @ high

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

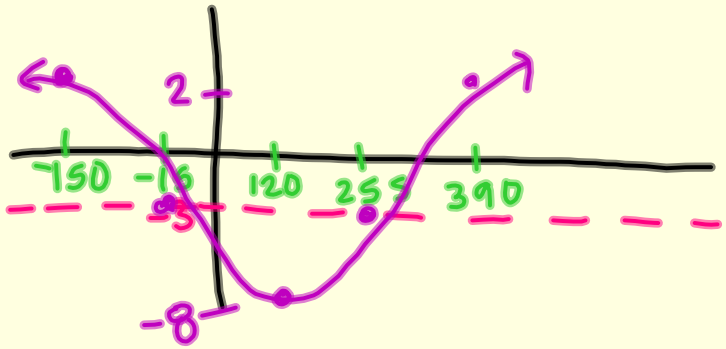
A: 5

Period $360 \div \frac{2}{3} = 360 \cdot \frac{3}{2} = 540°$

CP: $\frac{540}{4} = 135°$

1st VS: -3 sinusoidal axis (c)

PS -150 1st pt on x axis



2.2 More Graphing Trig

Essential Question: **How do I find the vertical shift and phase shift of a general sinusoidal function?**

2. $y = 5 - 6\cos\frac{\pi}{5}(x-2)$ radians

reflect across x-axis

A: 6

Per: $2\pi \div \frac{\pi}{5} = 2\pi \cdot \frac{5}{\pi} = 10$

CP: $\frac{10}{4} = 2.5$

VS: 5

PS: 2

2.2 More Graphing Trig

Essential Question: How do I find the vertical shift and phase shift of a general sinusoidal function?

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

reflect

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

$3(x + \frac{\pi}{6})$

factor out 3

Amp: 1

Per: $\frac{2\pi}{3}$

CP: $\frac{2\pi}{3} \cdot \frac{1}{4} = \frac{2\pi}{12} = \frac{\pi}{6}$

VS: 1

PS: $\frac{-\pi}{6}$