Warm Up

1. Identify the amplitude, frequency, period, and the y-intercept of the equation: $y = 3\sin(4x) - 2$

$a = 3 \quad B = 4$

$Y = -2 \quad P = \frac{4\pi}{2}$

v.stretch by 2

up 4

2. How does the graph of $g(x) = 2\sin(3x) + 4$ differ from the graph of its parent function, $f(x) = \sin(x)$?

)

$b = 3$

$P = \frac{2\pi}{3}$

① $Y = ③ \sin (4x) - 2$

$a = 3$
vertical
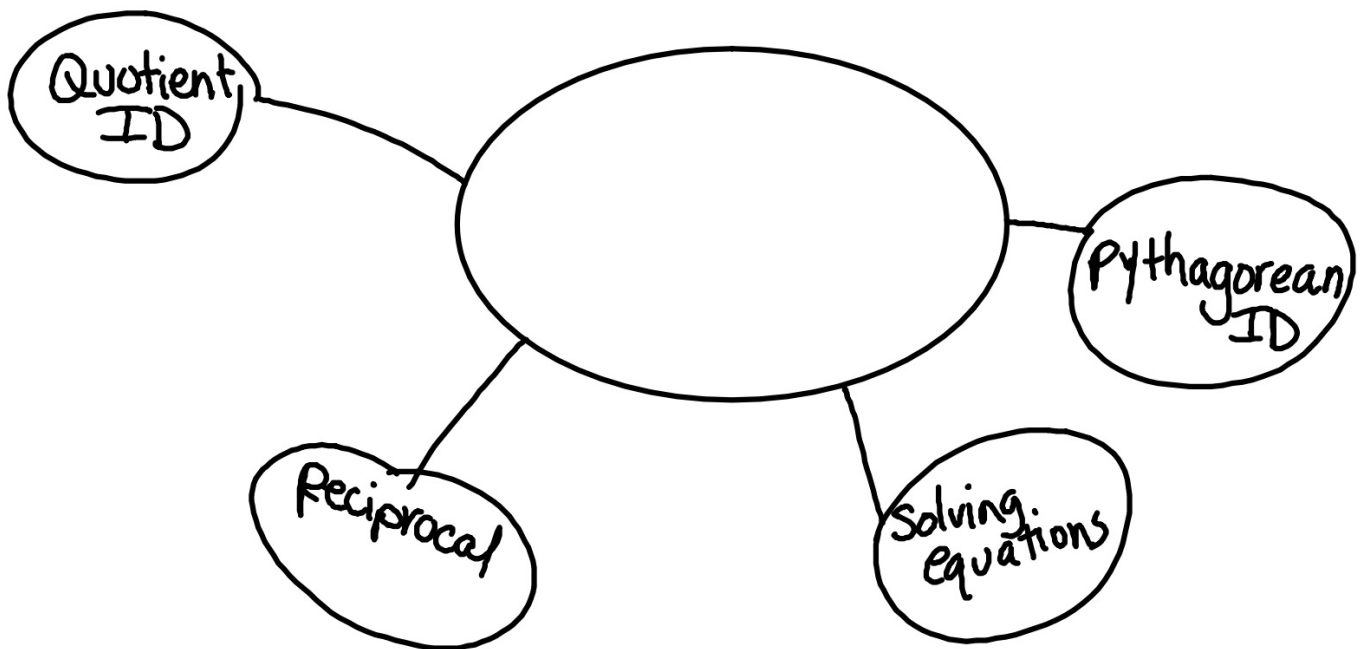Stretch

$b = 4$
$P = \frac{\pi}{2}$ Period is shorter

down 2

② $Y = ② \sin (3x) + 4$

$a = 2$
amplitude
is taller

$b = 3$
$P = \frac{2\pi}{3}$
shorter
period

up 4

Unit 6 Summary

Quotient ID

Pythagorean ID

Reciprocal

Solving equations

Unit 6 Analytic Trigonometry Reloop

- Collaborate in teams of 2 or 3
- Ask 3 before me!
- Check the solution station for help!

Solve for ALL angles

1. $2\cos\theta + 1 = 0$

$$\frac{-1 \qquad -1}{}$$

$$2\cos\theta = -1$$

$$\cos\theta = -\frac{1}{2}$$

$$\cos^{-1}\left(-\frac{1}{2}\right) = \theta$$

$$\boxed{120° = \theta}$$

$\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$

$120°$

$\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$

$240°$ $\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$ $\{120°, 240°\}$

2. $\sqrt{2}\sin\theta - 1 = 0$

$$\frac{+1 \qquad +1}{}$$

$$\sqrt{2}\sin\theta = 1$$

$\sin\theta = y$ $\quad \sin\theta = \frac{1}{\sqrt{2}}$

$$\sin^{-1}\left(\frac{1}{\sqrt{2}}\right) = \theta$$

$$\boxed{45° = \theta \text{ and } 135°}$$

$\left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$ $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

$135°$ $\quad 45°$

$225°$ $\quad 315°$

3. $4\cos^2\theta - 3 = 0$

$$4\cos^2\theta = 3$$

$$\cos^2\theta = \frac{3}{4}$$

$$\cos\theta = \pm\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{2}$$

$\frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2}$

* break down the + and − equations

$\cos\theta = \frac{\sqrt{3}}{2}$

$$\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = \theta$$

$$\boxed{30° = \theta}$$

and $330°$

$\cos\theta = -\frac{\sqrt{3}}{2}$

$$\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right) = \theta$$

$$\boxed{150° = \theta}$$

and $210°$

$330°$ $\quad 150°$ $\quad 210°$ $\quad 330°$

6.4 Solving Trigonometric Equations

<u>Materials Needed</u>
○ **knowledge of unit circle and angles**
○ **solid understanding of inverse operations**

TEST

Units 1, 2, 3, 4, 5, and 6
Multiple Choice
Short Answers

COMPLETE THE STUDY GUIDE!