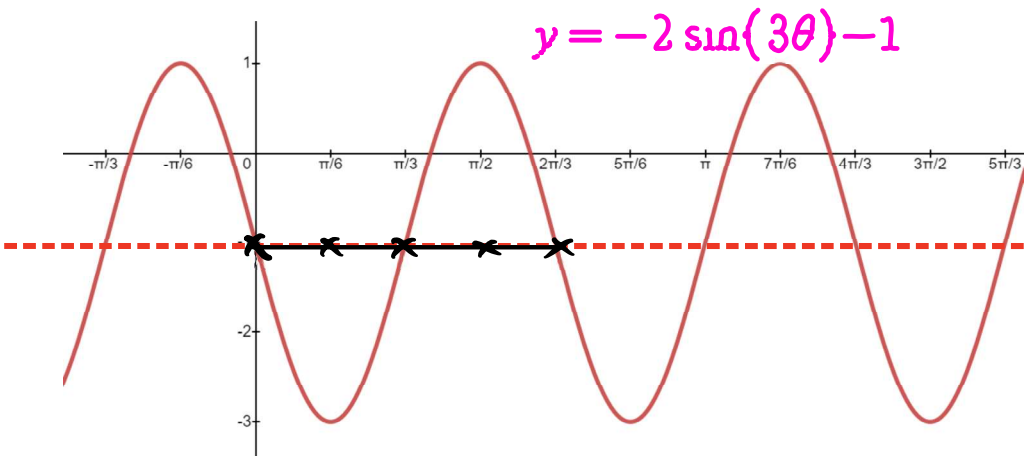
Mini review of unit 11.

Assume horizontal shifts are the shortest distance left or right possible.

1. Write the equation of the sine graph. Answer the questions relating to each graph.



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

Horizontal shift = 0

Vertical shift = -1

Amplitude = 2

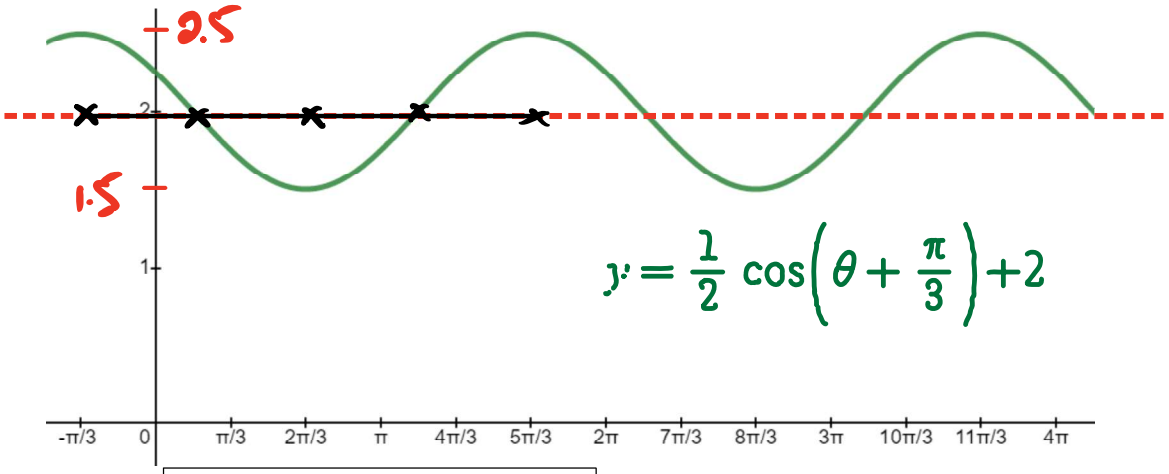
Vertical Reflection? Yes/No

Midline = $y = -1$

Domain = $\mathbb{R}$

Range = $[-3, 1]$

2. Write the equation of the cosine graph, assuming this graph has no reflections. Answer the questions relating to each graph.



Period = 2π

Horizontal shift = $-\frac{\pi}{3}$

Vertical shift = 2

Amplitude = $1/2$

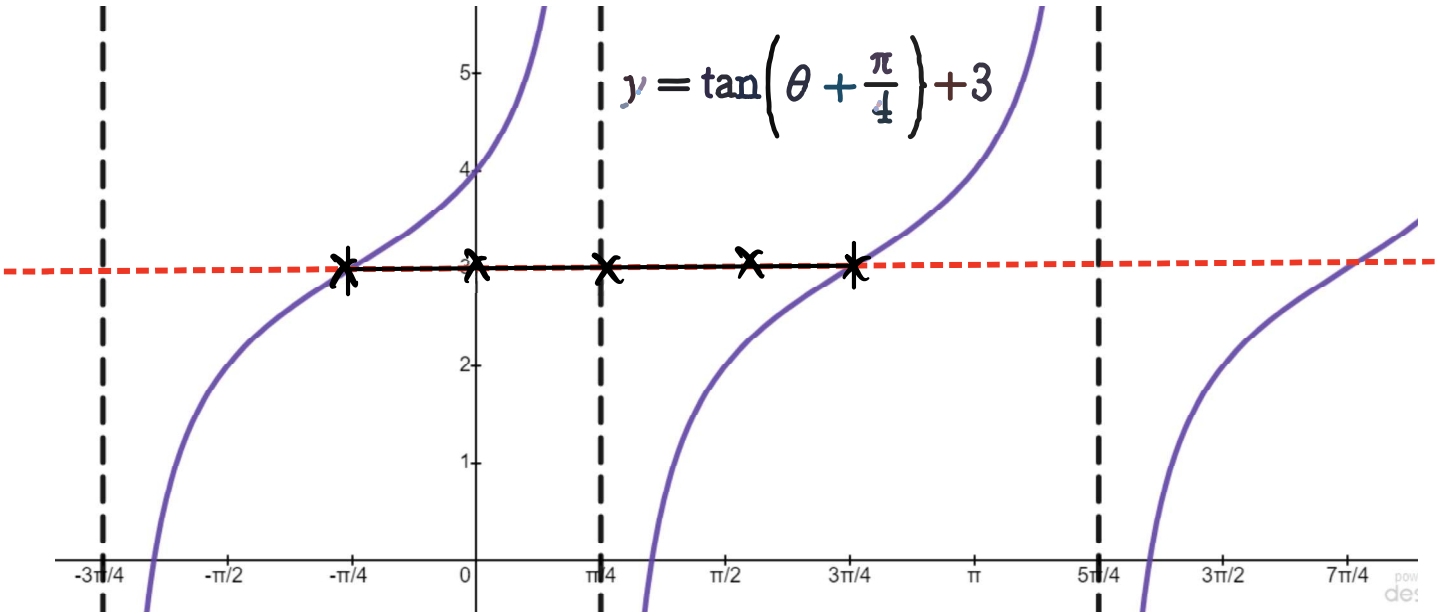
Vertical Reflection? Yes/No

Midline = $y = 2$

Domain = $\mathbb{R}$

Range = $[1.5, 2.5]$

3. Write the equation of the tangent graph, knowing there are no dilations. Answer the questions relating to each graph.



Period = π

Horizontal shift = $-\frac{\pi}{4}$

Vertical shift = 3

Amplitude = ~~X~~

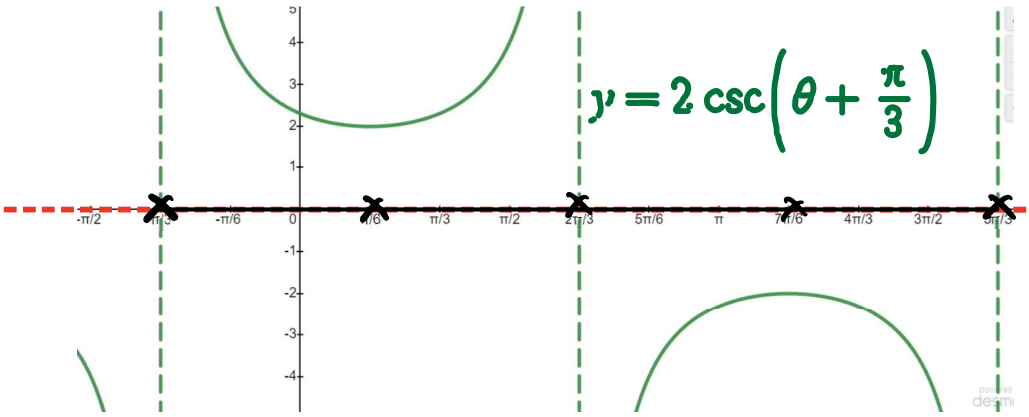
Vertical Reflection? Yes/No

Midline = $y = 3$

Domain = $\mathbb{R}$ except $\left(\frac{\pi}{4} + \pi k\right)$ where $x \in \mathbb{Z}$

Range = $\mathbb{R}$

4. Write the equation of the cosecant graph. Answer the questions relating to each graph.



Period = 2π

Horizontal shift = $-\frac{\pi}{3}$

Vertical shift = 0

Amplitude = ~~X~~

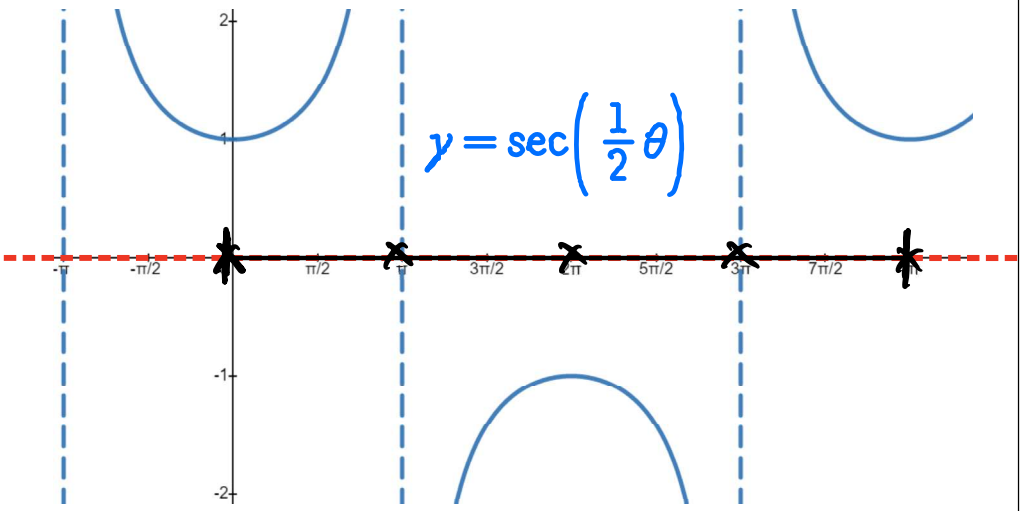
Vertical Reflection? Yes/No

Midline = $y = 0$

Domain = $\mathbb{R}$ except $\left(\frac{2\pi}{3} + 2\pi k\right)$, $k \in \mathbb{Z}$

Range = $(-\infty, -2] \cup [2, \infty)$

5. Write the equation of the secant graph. Answer the questions relating to each graph.



$y = \sec\left(\frac{1}{2}\theta\right)$

Period = 2π

Horizontal shift = 0

Vertical shift = 0

Amplitude = ~~X~~

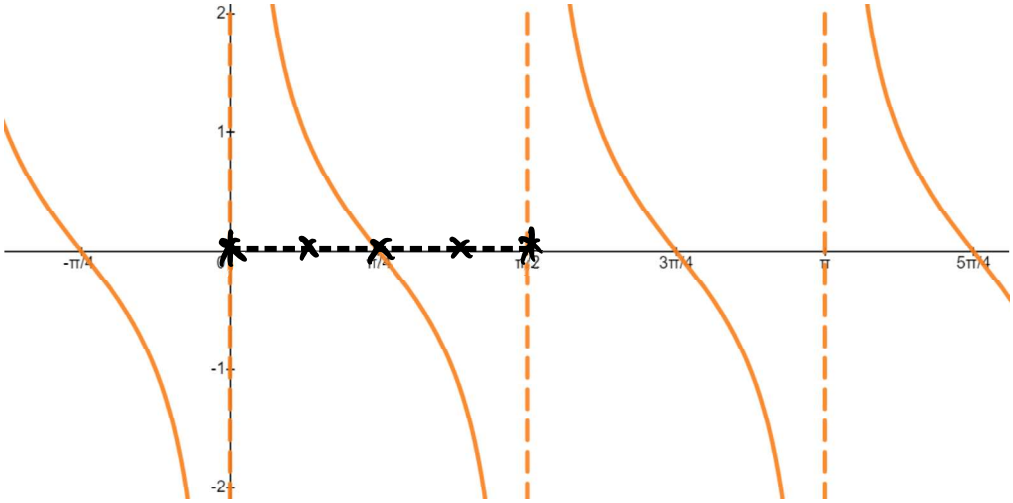
Vertical Reflection? Yes (No)

Midline = $y = 0$

Domain = $\mathbb{R}$ except $(\pi + 2\pi k)$, $k \in \mathbb{Z}$

Range = $(-\infty, -1] \cup [1, \infty)$

6. Write the equation of the cotangent graph, knowing there are no dilations. Answer the questions relating to each graph.



$y = \cot(2\theta)$

Period = $\frac{\pi}{2}$

Horizontal shift = 0

Vertical shift = 0

Amplitude = ~~X~~

Vertical Reflection? Yes (No)

Midline = $y = 0$

Domain = $\mathbb{R}$ except $\left(\frac{\pi}{2}k\right)$, where $k \in \mathbb{Z}$

Range = $\mathbb{R}$

1. $y = -2\sin(3\theta) - 1$
2. $y = \frac{1}{2}\cos\left(\theta + \frac{\pi}{3}\right) + 2$
3. $y = \tan\left(\theta + \frac{\pi}{4}\right) + 3$
4. $y = 2\csc\left(\theta + \frac{\pi}{3}\right)$
5. $y = \sec\left(\frac{1}{2}\theta\right)$
6. $y = \cot(2\theta)$