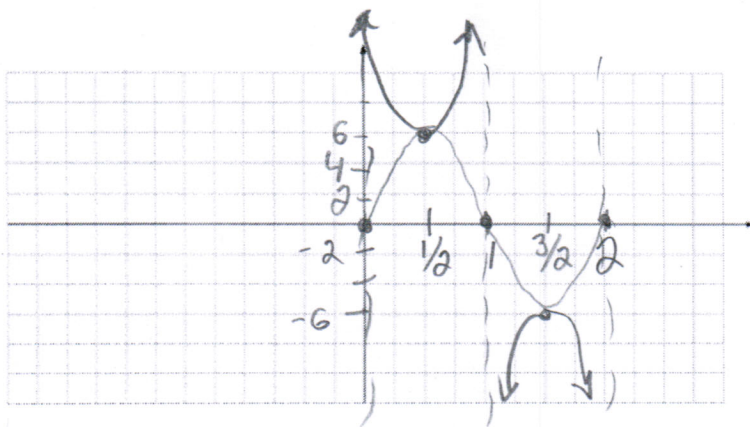


Graph one period of each trigonometric function. Labels must be placed on the axes to communicate where each point or asymptote is.

1. $y = 6\csc(\pi x)$

$$y = 6\sin(\pi x)$$

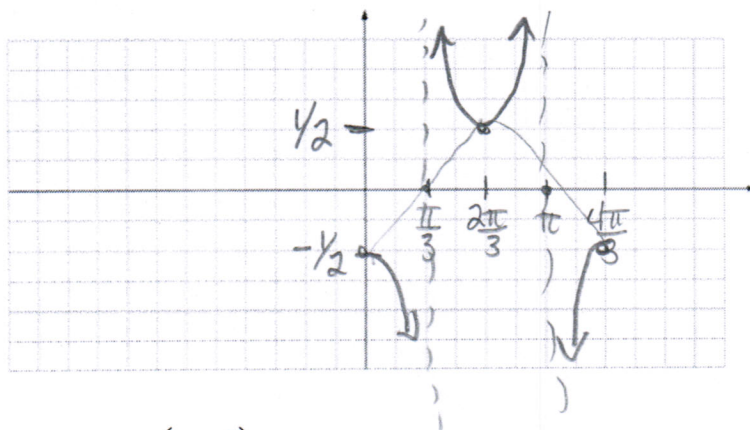
$$\text{period} = \frac{2\pi}{\pi} = 2$$



2. $y = -\frac{1}{2}\sec\left(\frac{3}{2}x\right)$

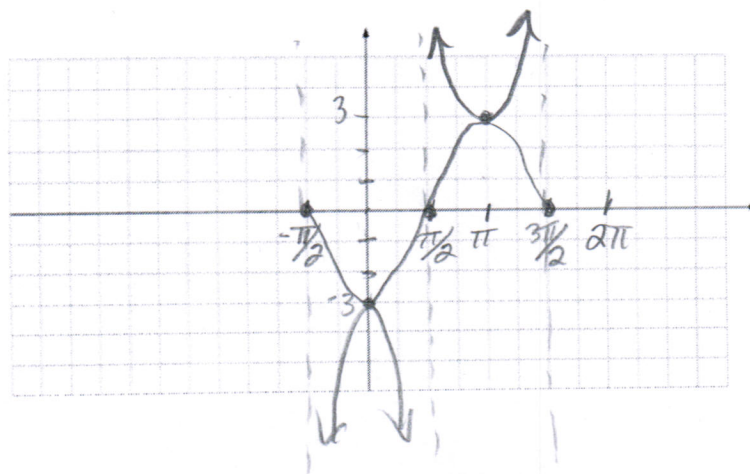
$$y = -\frac{1}{2}\cos\left(\frac{3}{2}x\right)$$

$$\text{period} = \frac{2\pi}{3/2} = \frac{2\pi}{1} \cdot \frac{2}{3} = \frac{4\pi}{3}$$



3. $y = -3\csc\left(x + \frac{\pi}{2}\right)$

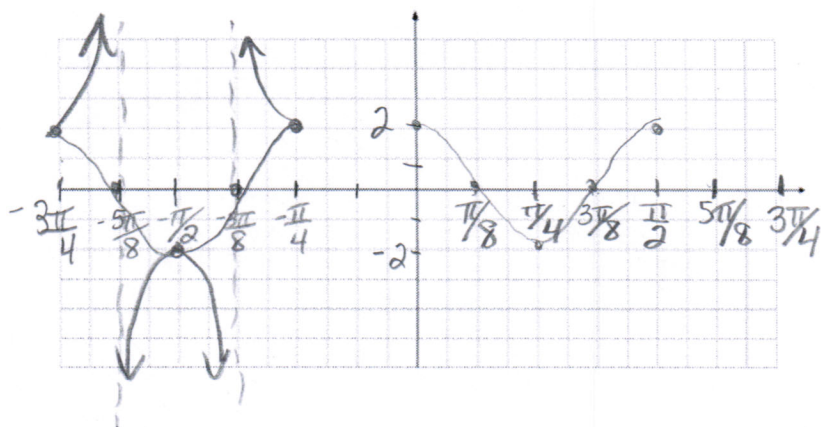
$$y = -3\sin\left(x + \frac{\pi}{2}\right)$$



4. $y = 2 \sec\left(4\left(x + \frac{3\pi}{4}\right)\right)$

$$y = 2 \cos\left(4\left(x + \frac{3\pi}{4}\right)\right)$$

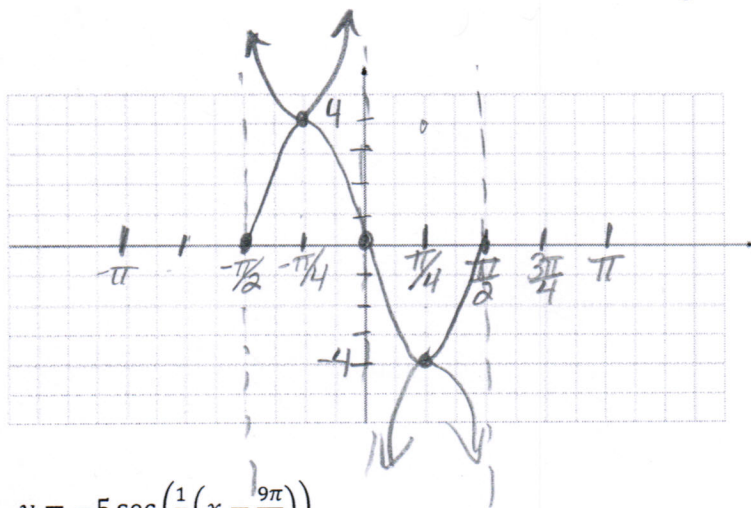
period = $\frac{2\pi}{4} = \frac{\pi}{2}$



5. $y = 4 \csc\left(2\left(x - \frac{\pi}{2}\right)\right)$

$$y = 4 \sin\left(2\left(x - \frac{\pi}{2}\right)\right)$$

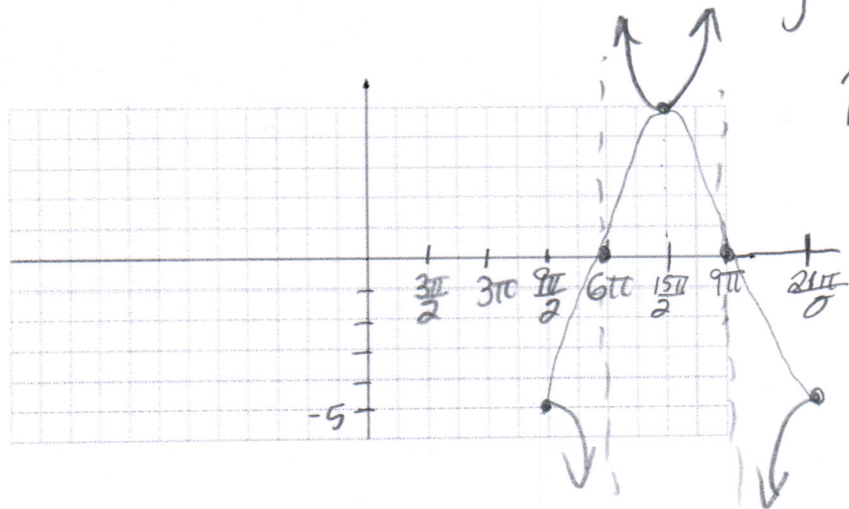
period = $\frac{2\pi}{2} = \pi$



6. $y = -5 \sec\left(\frac{1}{3}\left(x - \frac{9\pi}{2}\right)\right)$

$$y = -5 \cos\left(\frac{1}{3}\left(x - \frac{9\pi}{2}\right)\right)$$

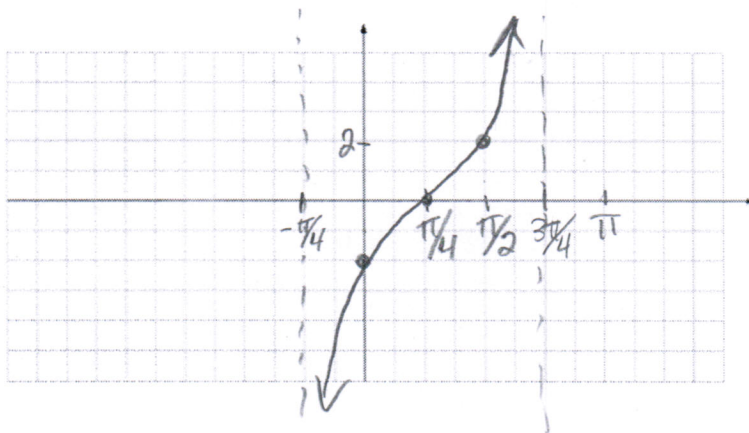
period = $\frac{2\pi}{1/3} = 6\pi$



7. $y = -2 \cot\left(x + \frac{\pi}{4}\right)$

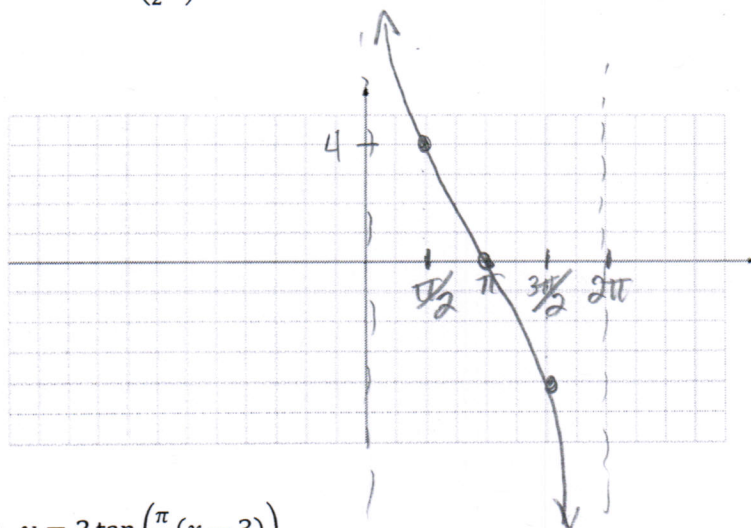
$y = -2 \cot(x)$

Period = π



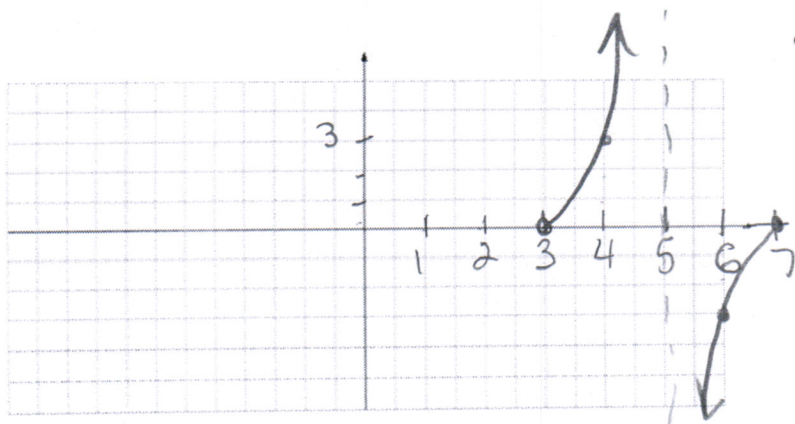
8. $y = 4 \cot\left(\frac{1}{2}x\right)$

period = $\frac{\pi}{1/2} = 2\pi$



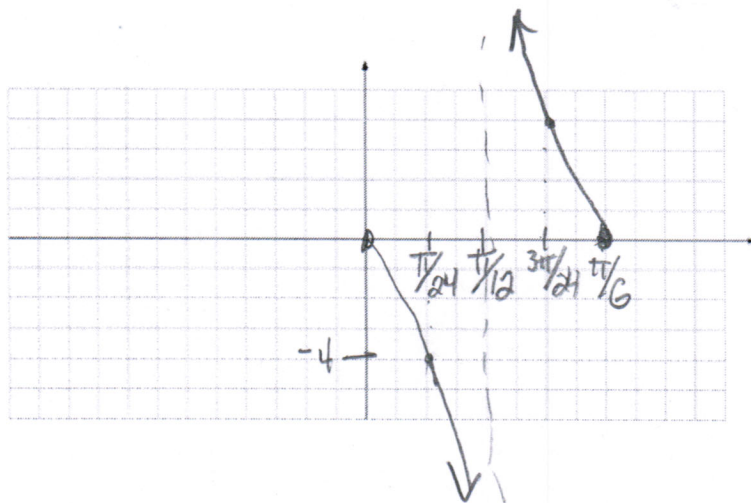
9. $y = 3 \tan\left(\frac{\pi}{4}(x - 3)\right)$

period = $\frac{\pi}{\pi/4} = 4$



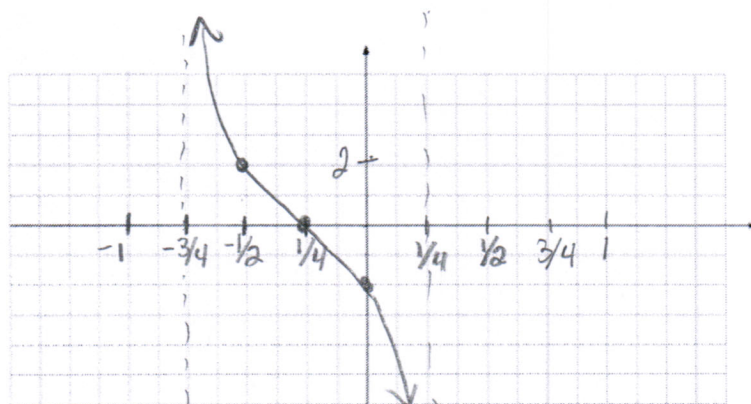
10. $y = -4 \tan(6x)$

period = $\frac{\pi}{6}$



11. $y = 2 \cot\left(\pi\left(x + \frac{3}{4}\right)\right)$

period = $\frac{\pi}{\pi} = 1$



12. Show that $\sin\left(\theta + \frac{\pi}{2}\right) = \cos\theta$ by graphing each side of the equation.

$\sin\left(\theta + \frac{\pi}{2}\right)$

$\cos(\theta)$

