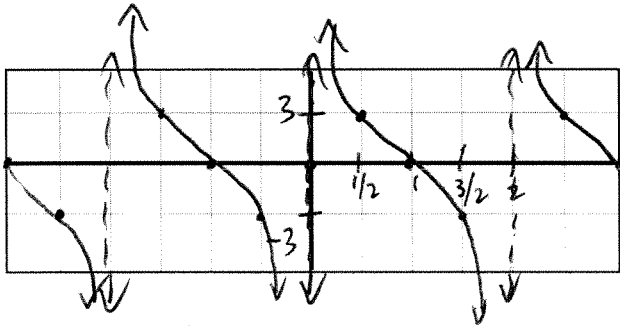


**Section 4.6 Worksheet (Graphs of Other Trigonometric Functions Functions)**

Determine the amplitude, period, and phase shift of each function. Then graph one period of the function.

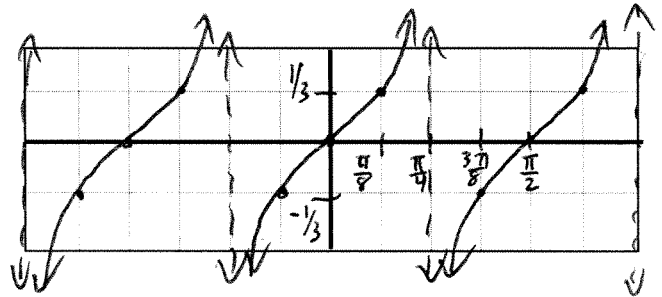
1)  $y = 3 \cot \frac{\pi}{2} x$

Amp. =  $\boxed{3}$  Period =  $\frac{\pi}{\frac{\pi}{2}} = \boxed{2}$



2)  $y = \frac{1}{3} \tan 2x$

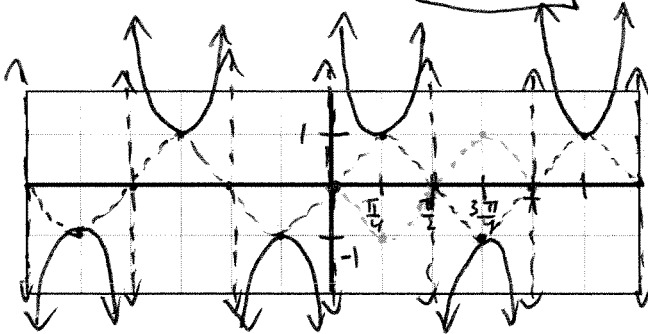
Amp. =  $\boxed{\frac{1}{3}}$  Period =  $\boxed{\frac{\pi}{2}}$



3)  $y = -\csc(2x - \pi)$

Amp. =  $\boxed{1}$  Period =  $\frac{2\pi}{2} = \boxed{\pi}$

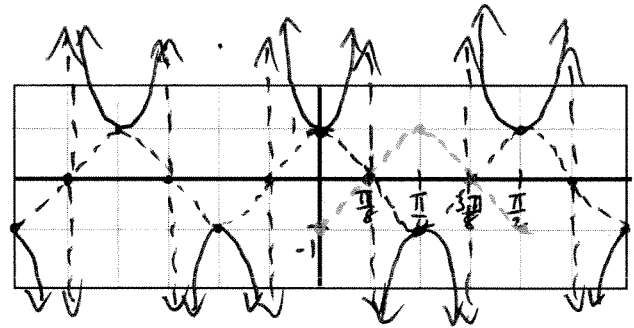
Hor. Phase Shift =  $\boxed{x + \frac{\pi}{2}}$



4)  $y = -\sec(4x + \pi)$

Amp. =  $\boxed{1}$  Period =  $\frac{2\pi}{4} = \boxed{\frac{\pi}{2}}$

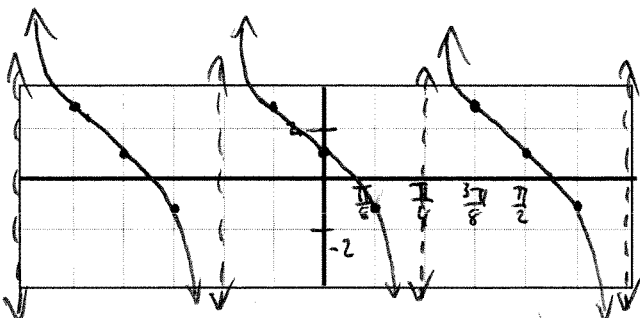
Hor. Phase Shift =  $\boxed{x + \frac{\pi}{4}}$



5)  $y = -2 \tan 2x + 1$

Amp. =  $\boxed{2}$  Period =  $\boxed{\frac{\pi}{2}}$

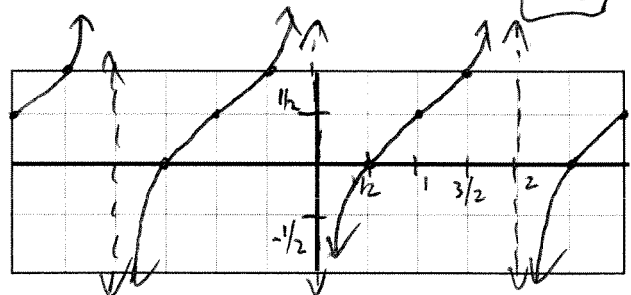
Vertical Shift =  $\boxed{y + 1}$



6)  $y = -\frac{1}{2} \cot \frac{\pi}{2} x + \frac{1}{2}$

Amp. =  $\boxed{\frac{1}{2}}$  Period =  $\frac{\pi}{\frac{\pi}{2}} = \boxed{2}$

Vertical Phase Shift =  $\boxed{y + \frac{1}{2}}$

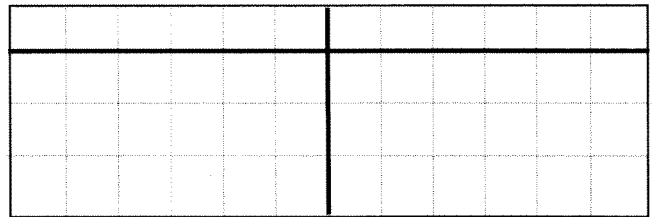
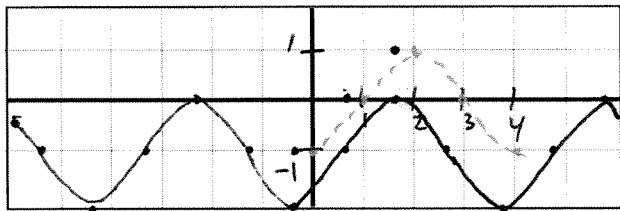


$$7) y = -\cos\left(\frac{\pi}{2}x + \frac{1}{2}\right) - 1$$

Amp =  $\boxed{1}$  Period =  $\frac{2\pi}{\frac{\pi}{2}} = \boxed{4}$

Horizontal PS:  $\boxed{x - \frac{1}{\pi} \approx x - 0.3}$

Vertical PS:  $\boxed{y - 1}$

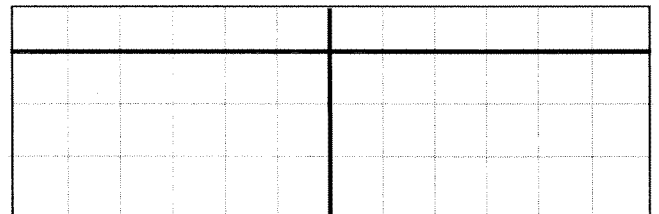
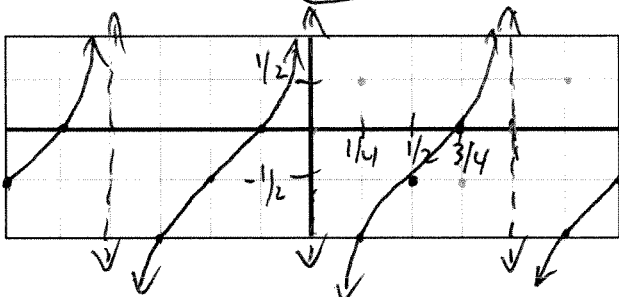


$$8) y = \frac{1}{2} \tan\left(\pi x - \frac{\pi}{2}\right) - \frac{1}{2}$$

Amp:  $\boxed{\frac{1}{2}}$  Period:  $\frac{\pi}{\pi} = \boxed{1}$

Horizontal PS:  $\boxed{x + \frac{1}{2}}$

Vertical PS:  $\boxed{y - \frac{1}{2}}$



$$9) y = 2 \cot(x - \pi) + 1$$

Amp:  $\boxed{2}$  Period:  $\boxed{\pi}$

Horizontal PS:  $\boxed{x + \pi}$

Vertical PS:  $\boxed{y + 1}$

