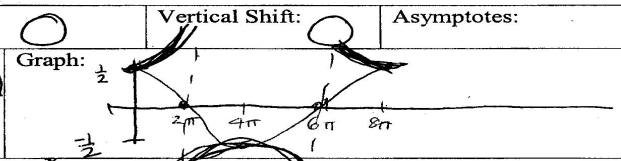
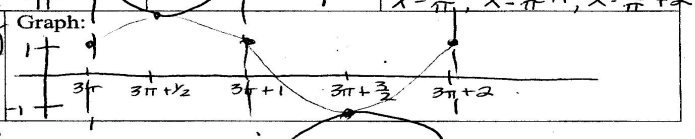
9. Amplitude = $\frac{1}{2}$	Period = π	Phase Shift = 0	Vertical Shift = 0
$\frac{2\pi}{b}=\pi$, $b=2$; $0=\frac{-c}{2}$, $c=0$			$y=0\pm\frac{1}{2}\cos(2x+0)$
10. Amplitude = 5	Period = 3	Phase Shift = −1	Vertical Shift = −4
$\frac{2\pi}{b}=3$, $b=\frac{2\pi}{3}$; $-\frac{c}{\frac{2\pi}{3}}=-1$, $c=\frac{2\pi}{3}$			$y=-4\pm5\cos\left(\frac{2\pi}{3}x+\frac{2\pi}{3}\right)$
11. Amplitude = 1	Period = $\frac{\pi}{4}$	Phase Shift = 1	Vertical Shift = −2
$\frac{2\pi}{b}=\frac{\pi}{4}$, $\pi b=8\pi$; $-\frac{c}{8}=1$			$y=-2\pm\cos(8x-8)$

State the amplitude, period, phase shift, asymptotes and vertical shift for each of the following.

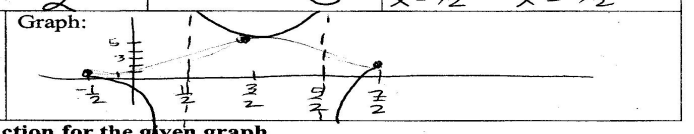
12. $y=\frac{1}{2}\sec\left(\frac{x}{4}\right)$ $\frac{2\pi}{\frac{1}{4}}$

Amplitude: None	Period: 8π	Phase Shift: 0	Vertical Shift: 0	Asymptotes:
Key Points: $(0,\frac{1}{2})(2\pi,0)(4\pi,\frac{1}{2})(6\pi,0)(8\pi,\frac{1}{2})$		Graph: 		

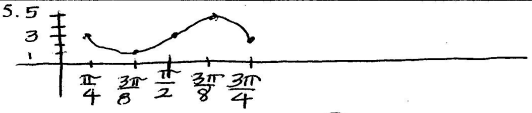
13. $y=1+2\csc(\pi x-3)$ $P/4=\frac{2}{\pi}$

Amplitude: none	Period: 2	Phase Shift: $\frac{3}{\pi}$	Vertical Shift: 1	Asymptotes: $x=\frac{3}{\pi}$, $x=\frac{3}{\pi}+1$, $x=\frac{3}{\pi}+2$
Key Points: ~~$(\frac{3}{\pi},1)$~~ $(\frac{3}{\pi}+\frac{1}{2},3)$ ~~$(\frac{3}{\pi}+1,1)$~~ $(\frac{3}{\pi}+\frac{3}{2},-1)$ ~~$(\frac{3}{\pi}+2,1)$~~		Graph: 		

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

Amplitude: none	Period: 4	Phase Shift: $-\frac{1}{2}$	Vertical Shift: 3	Asymptotes: $x=1/2$ $x=5/2$
Key Points: $(-\frac{1}{2},1)$ $(\frac{3}{2},5)$ $(\frac{7}{2},1)$ ~~$(\frac{1}{2},3)$~~ ~~$(\frac{5}{2},3)$~~		Graph: 		

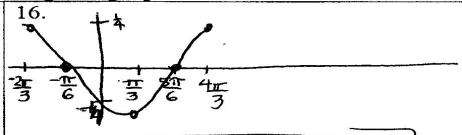
Write the equation of the trigonometric function for the given graph.

15. 

$A=2$ $P=\frac{\pi}{2}$ $PS=\frac{\pi}{4}$ $VS=3$

$y=3-2\sin(4x-\pi)$

$\frac{2\pi}{b}=\frac{\pi}{2}$ $\pi b=4\pi$ $b=4$ $\frac{c}{4}=\frac{\pi}{4}$ $c=-\pi$

16. 

$y=\frac{1}{4}\cos\left(x+\frac{2\pi}{3}\right)$