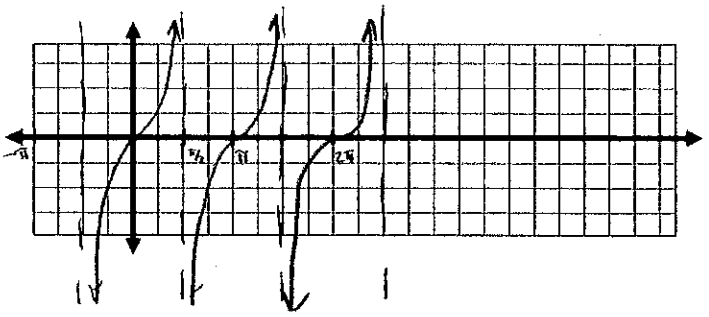
Precalculus
Section 4.5

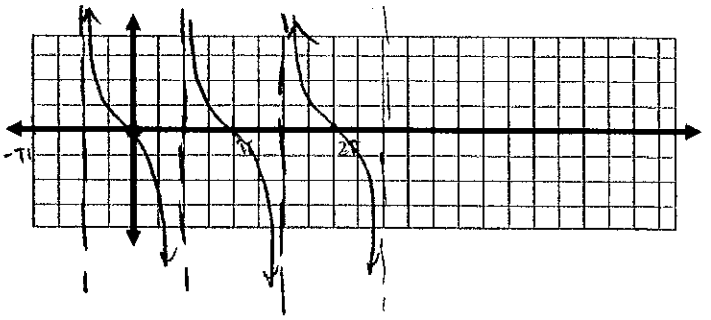
Name Key
Period _____ Date _____

Graph the given function.

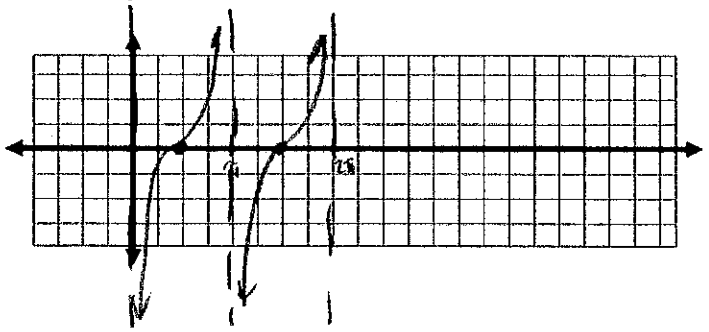
1. $y = 4\tan x$



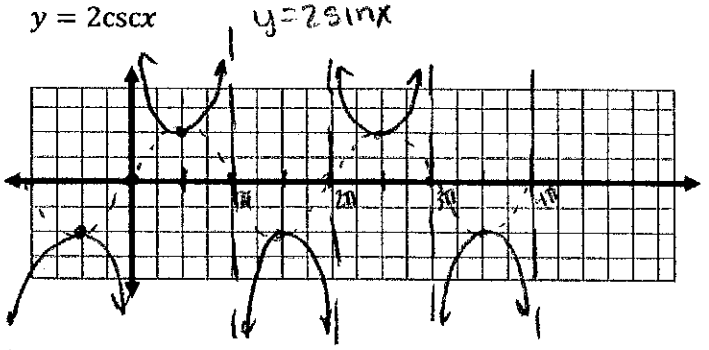
2. $y = -\frac{1}{2}\tan x$



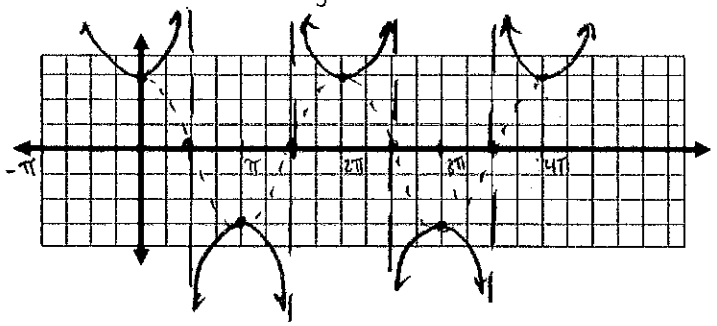
3. $y = -\cot x$



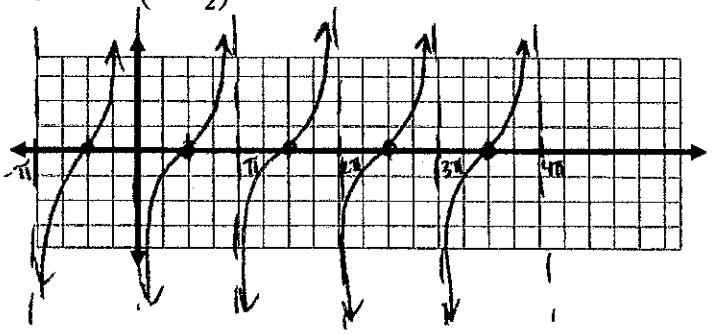
4. $y = 2\csc x$ $y=2\sin x$



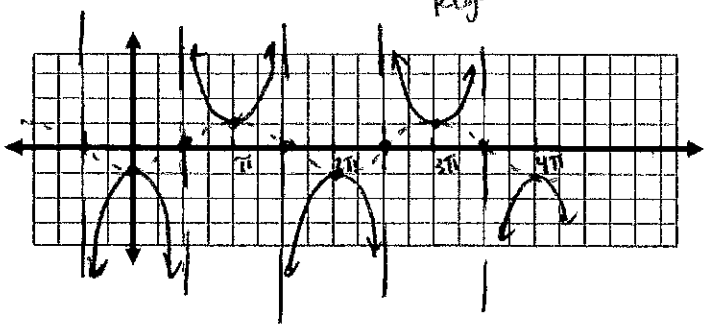
5. $y = 3\sec x$ $y=3\cos x$



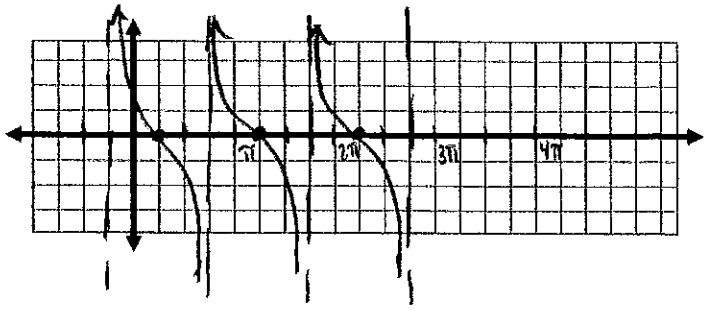
6. $y = \tan\left(x + \frac{\pi}{2}\right)$ left $\pi/2$



7. $y = \csc\left(x - \frac{\pi}{2}\right)$ $y = \sin\left(x - \frac{\pi}{2}\right)$ Right $\pi/2$

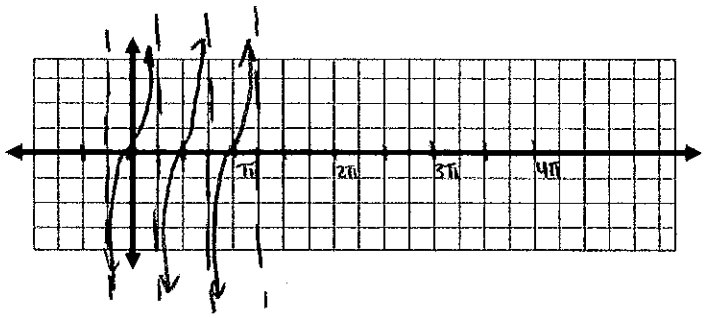


8. $y = \cot\left(x + \frac{\pi}{4}\right)$ left $\pi/4$



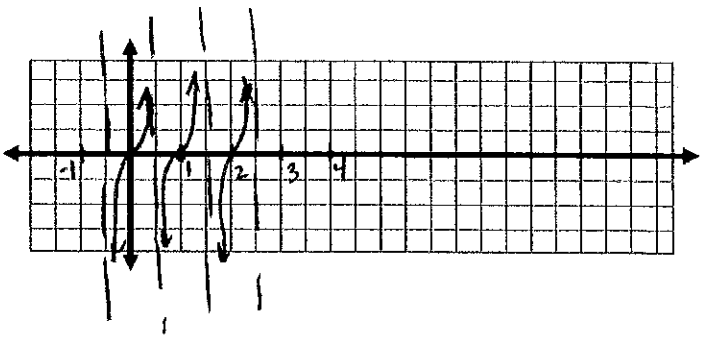
period $= \frac{\pi}{b} = \frac{\pi}{2}$

9. $y = \tan 2x$

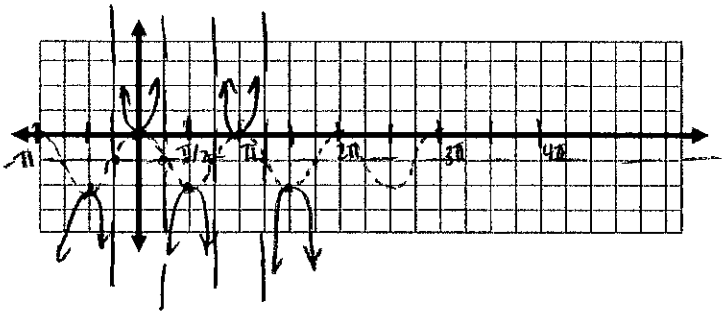


period: $\frac{\pi}{b} = \frac{\pi}{\pi} = 1$

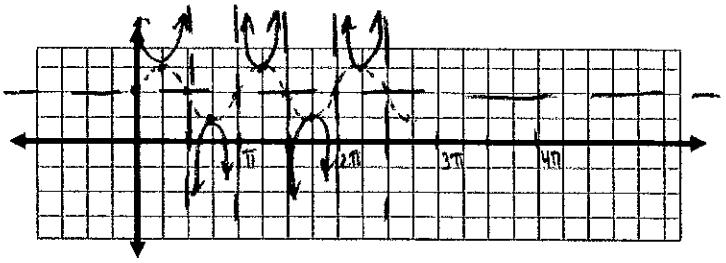
10. $y = \tan \pi x$



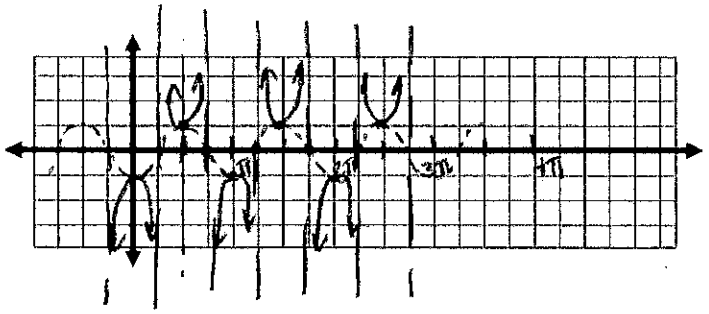
11. $y = \sec 2x - 1$ $y = \cos 2x - 1$ period $= \frac{2\pi}{2} = \pi$



12. $y = \csc 2x + 2$ $y = \sin 2x + 2$ $P = \frac{2\pi}{2} = \pi$

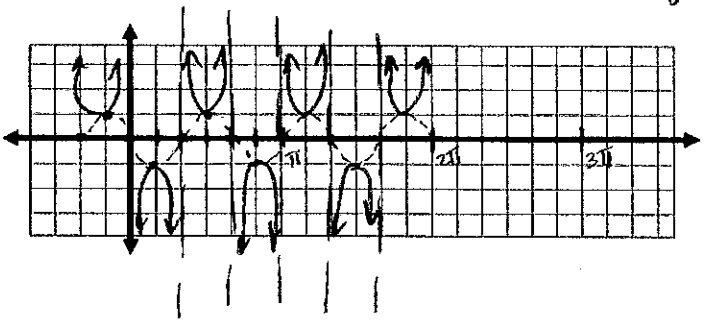


13. $y = \sec 2\left(x - \frac{\pi}{2}\right)$ $y = \cos 2(x - \pi/2)$ $P = \frac{2\pi}{2} = \pi$

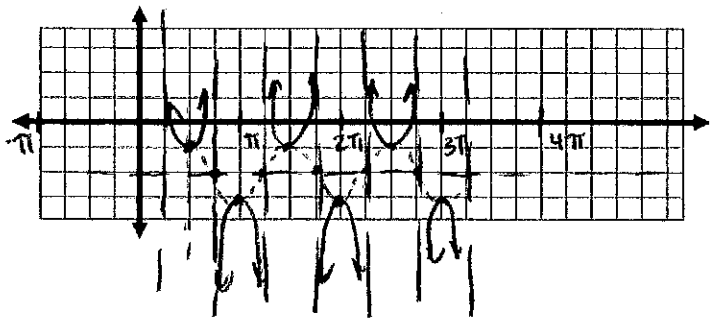


14. $y = 2\csc(3x + 3)$ Amp: 2 period: $\frac{2\pi}{3}$

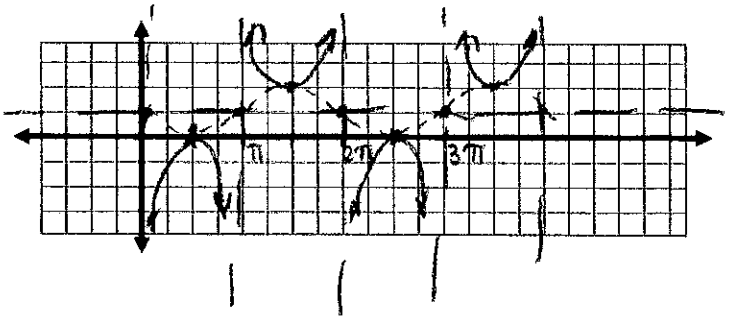
$3x + 3 = 0$
$3x = -3$
$x = -1$
left 1



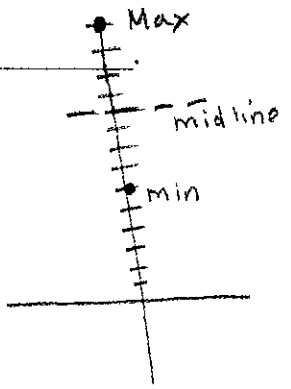
15. $y = \sec 2\left(x - \frac{\pi}{2}\right) - 2$ $y = \cos 2(x - \pi/2) - 2$ $P = \frac{2\pi}{2} = \pi$ right $\pi/2$



16. $y = -\csc x + 1$ $y = -\sin x + 1$



17. A sinusoid with amplitude of 4 has a minimum value of 5. Its maximum value is 13

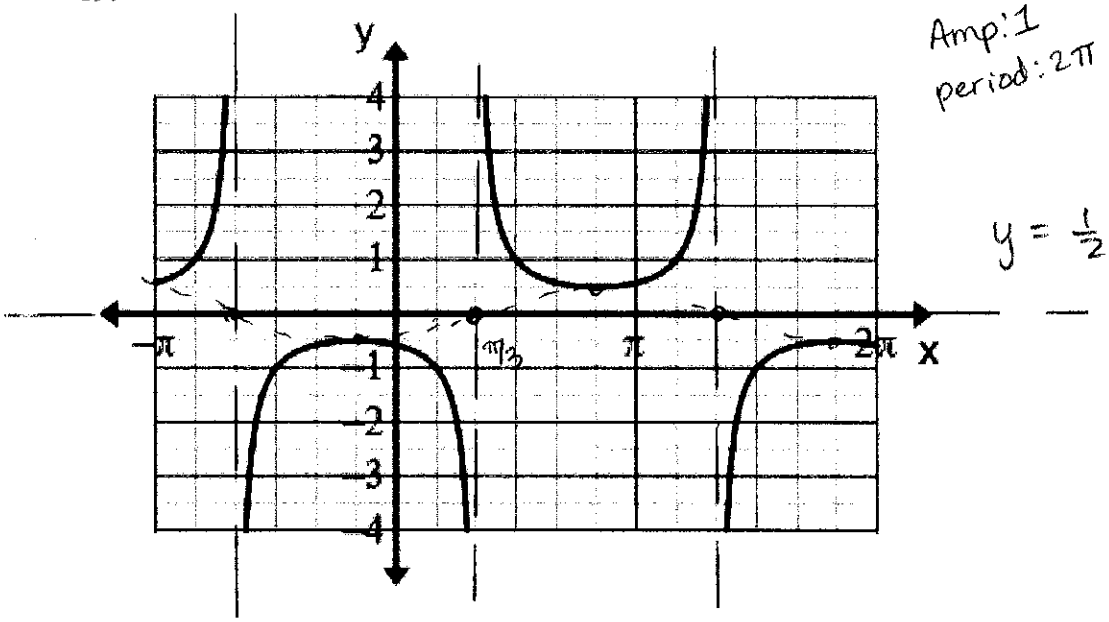


18. The period of the function $f(x) = 210\sin(420x + 840)$ is $\pi/210$.

$$\frac{2\pi}{420} = \frac{\pi}{210}$$

Write an equation for the given graphs.

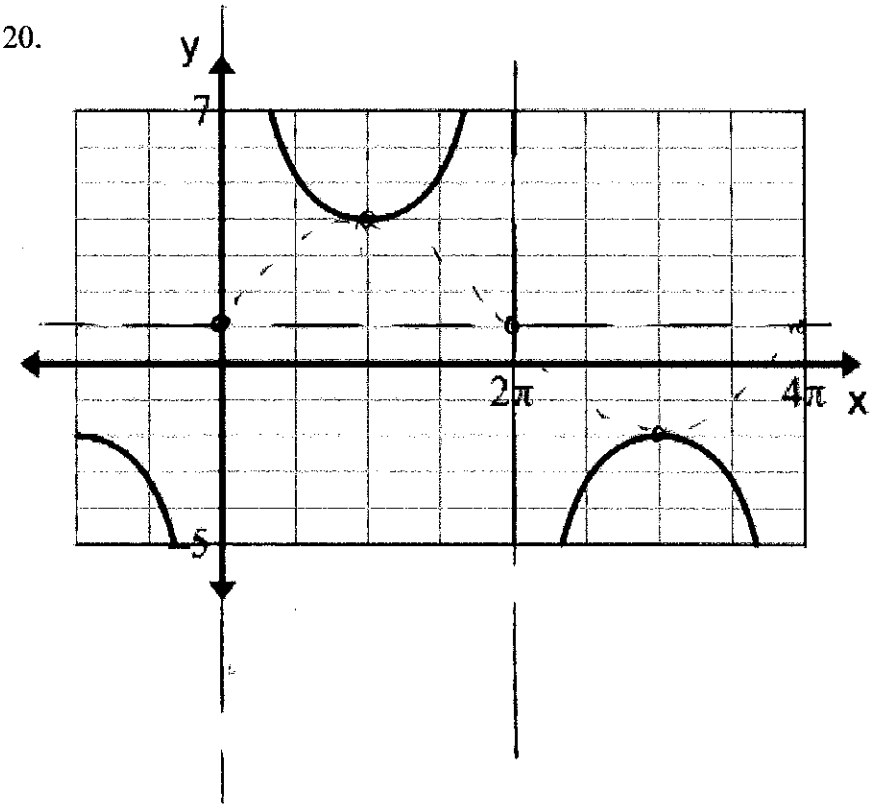
19.



Amp: 1
period: 2π

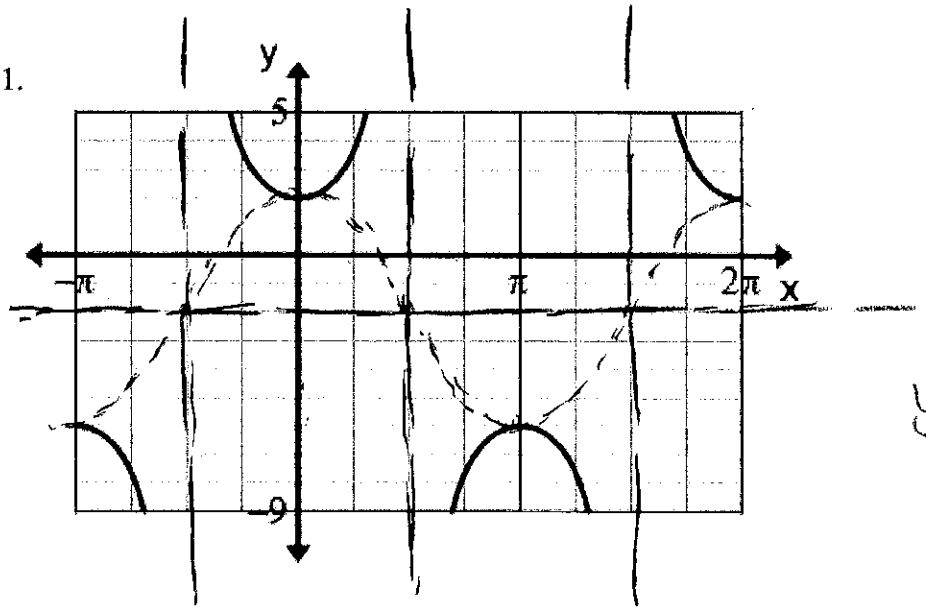
$y = \frac{1}{2}\csc(x - \frac{\pi}{3})$

20.



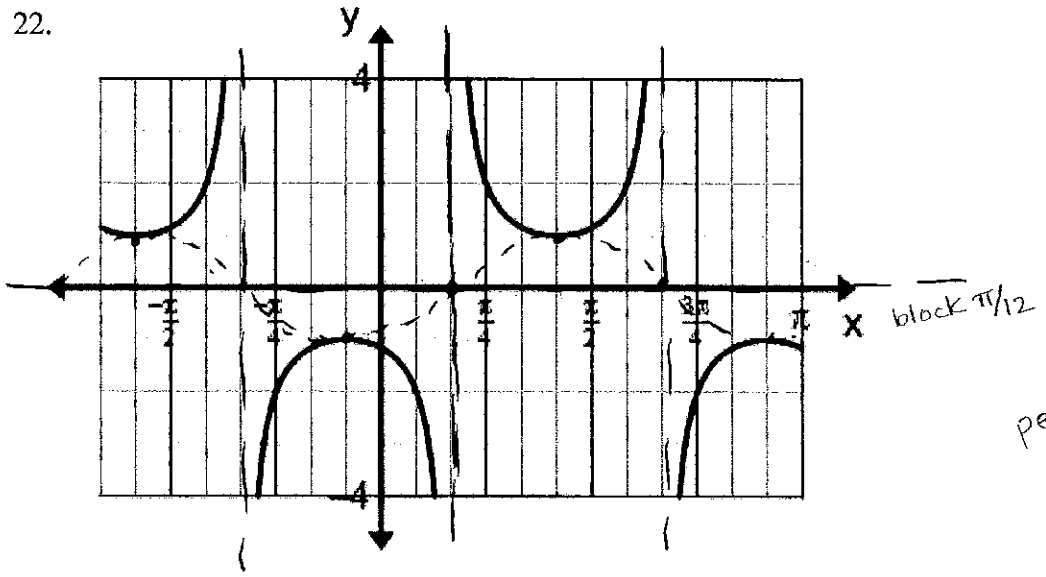
$P = 4\pi$

$y = 3\csc\frac{1}{2}(x) + 1$

21. 

period: 2π
down 2
Amp: 4

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

22. 

block π/12

$y = \csc 2(x - \pi/6)$

period = π
b = 2

Analyze the following graphs. Describe the transformations and give the period.

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

right π/2 period: π
up 1

24. $y = -\sec x + 2$

reflects over x-axis period: 2π
up 2

25. $y = \cot 4x - 2$

down 2
period: $\pi/4 = \pi/4$

26. $y = 3\csc 6\left(x - \frac{\pi}{12}\right) + 3$

amp: 3
period: $\frac{2\pi}{6} = \pi/3$
right π/12
up 3