Pre-calculus: **Name _____ period_____ date_____ score_____**

4.6 Homework

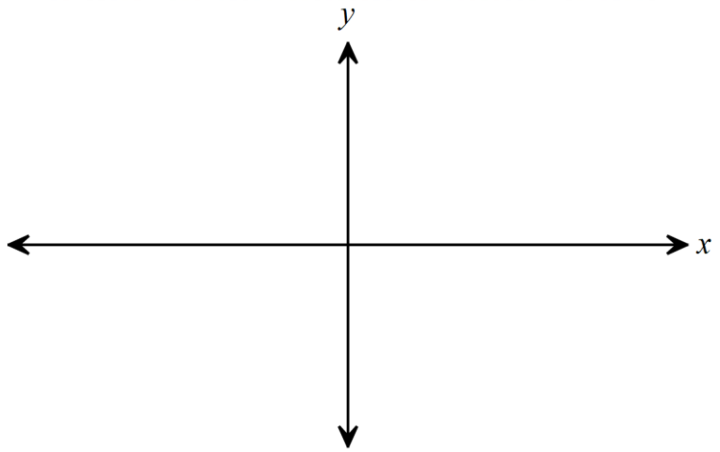
Find the exact value of each expression without using a calculator.

1. $\sec\left(\frac{\pi}{3}\right)$
2. $\sec\left(\frac{\pi}{4}\right)$
3. $\csc\left(-\frac{\pi}{4}\right)$
4. $\csc\left(\frac{\pi}{6}\right)$

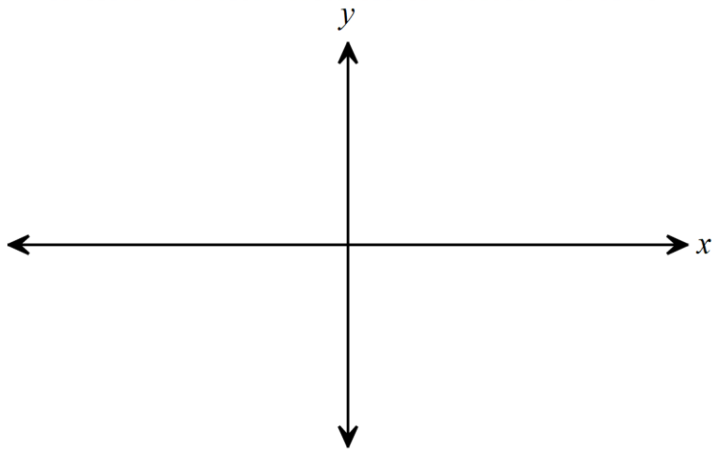
5. $\sec\left(\frac{\pi}{2}\right)$
6. $\csc\left(\frac{3\pi}{2}\right)$
7. $\sec(\pi)$
8. $\csc(0)$

Sketch at least one cycle of the graph of each function. State the period, equations of the vertical asymptotes, and range.

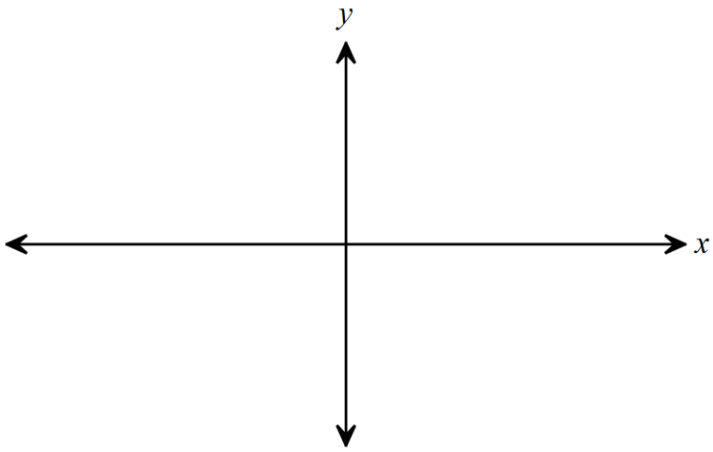
9. $y = \frac{1}{2}\sec x$



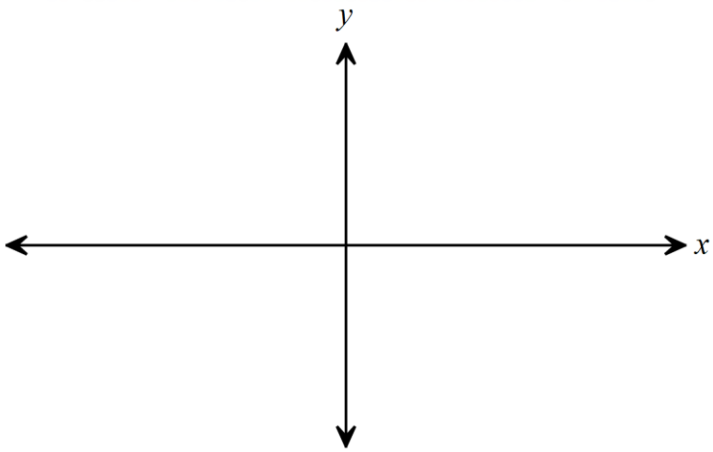
10. $y = -2\csc x$



11. $y = \csc(4x) + 2$

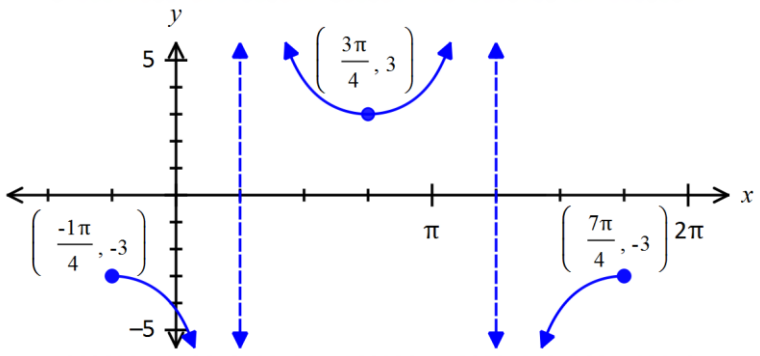


12. $y = 3\sec\left(\frac{x}{3}\right)$

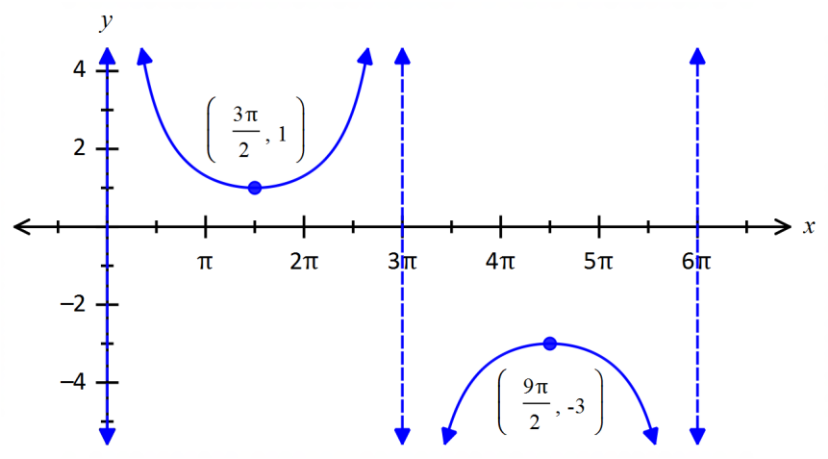


Find an equation for each curve in the requested form.

13. $y = a\sec\left[b(x-c)\right] + d$



14. $y = a\csc\left[b\left(x-c\right)\right]+d$



Find the exact value of each expression without using a calculator.

15. $\tan\left(-\frac{\pi}{3}\right)$ 16. $\cot\left(\frac{\pi}{3}\right)$ 17. $\cot\left(\frac{\pi}{2}\right)$ 18. $\tan\left(\frac{\pi}{2}\right)$

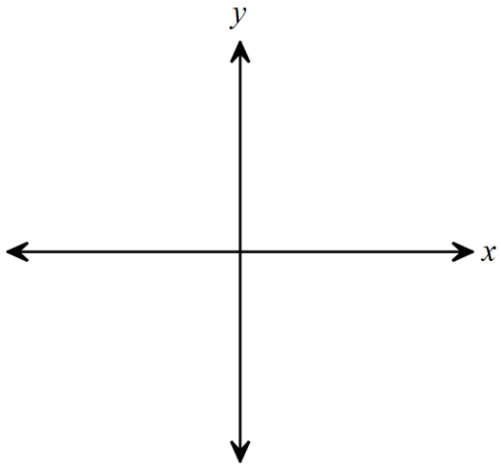
19. $\cot\left(-\frac{\pi}{4}\right)$ 20. $\tan\left(\frac{\pi}{6}\right)$ 21. $\cot(0)$ 22. $\tan(-\pi)$

Sketch at least one cycle of the graph of each function. Determine the period and the equations of the vertical asymptotes.

23. $y = \tan(3x)$

period_____

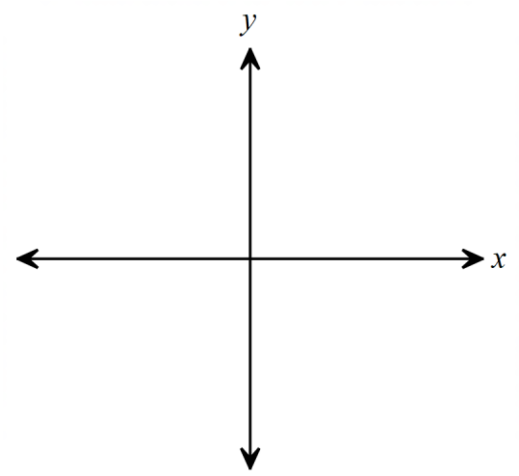
vertical asymptotes_____



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

period_____

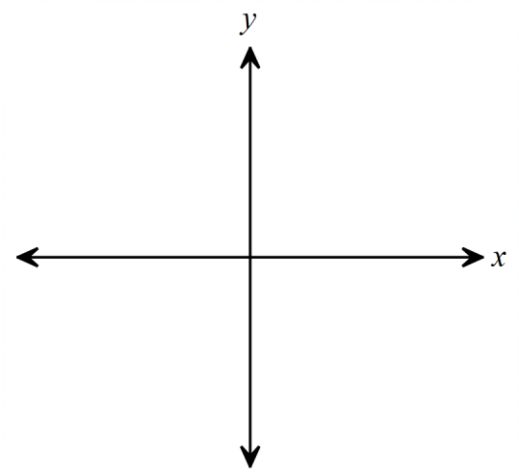
vertical asymptotes_____



25. $y = 3\tan x - 2$

period_____

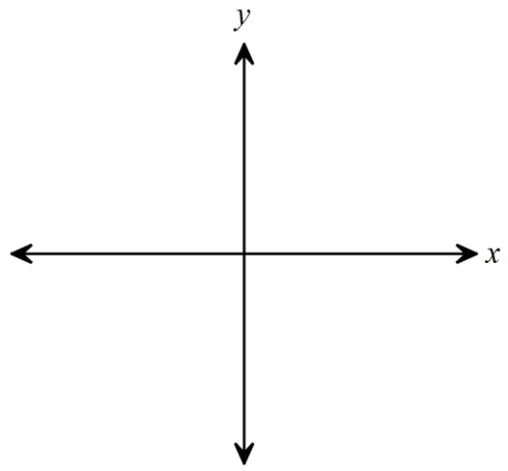
vertical asymptotes_____



26. $f(x) = 2\cot(x + \pi) - 1$

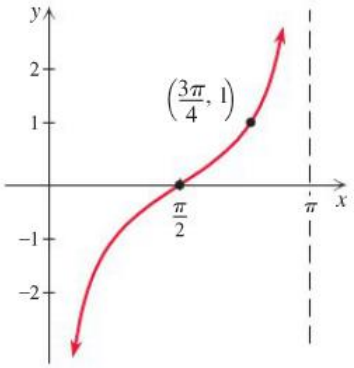
period_____

vertical asymptotes_____



Write two equations for each curve – one in the form $y = a\tan\left[b\left(x-c\right)\right]+d$ and one in the form $y = a\cot\left[b\left(x-c\right)\right]+d$.

27.



28.