

4.6-4.7 Review Non-calculator

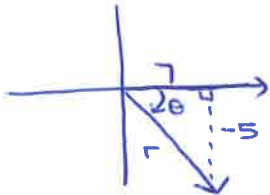
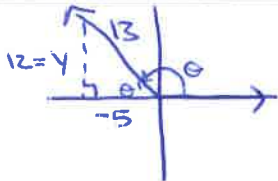
If possible, find the exact value in radians. Be sure to consider the domain and range restrictions.

1. $\arccos(0)$ $\frac{\pi}{2}$	2. $\sin^{-1}(0)$ 0	3. $\arctan(0)$ 0	4. $\tan^{-1}(\sqrt{3})$ $\frac{\pi}{3}$
5. $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$ $\frac{\pi}{4}$	6. $\arccos\left(-\frac{\sqrt{2}}{2}\right)$ $\frac{3\pi}{4}$	7. $\sin^{-1}(-4)$ undefined	8. $\arcsin\left(-\frac{\sqrt{3}}{2}\right)$ $-\frac{\pi}{3}$
9. $\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right)$ $-\frac{\pi}{6}$	10. $\cos^{-1}\left(-\frac{1}{2}\right)$ $\frac{2\pi}{3}$	11. $\arcsin\left(-\frac{\sqrt{2}}{2}\right)$ $-\frac{\pi}{4}$	12. $\tan^{-1}(-1)$ $-\frac{\pi}{4}$

If possible, find the exact value. Be sure to consider the domain and range.

13. $\sin(\arcsin 7)$ not in the domain of $\sin^{-1}x$ undefined	14. $\cos^{-1}\left(\cos\frac{5\pi}{4}\right)$ $\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right)$ $\frac{3\pi}{4}$
15. $\tan[\arctan(7)]$ $\tan^{-1}x$ domain is $(-\infty, \infty)$ 7	16. $\arcsin\left[\cos\left(\frac{\pi}{3}\right)\right]$ $\arcsin\left(\frac{1}{2}\right)$ $\frac{\pi}{6}$
17. $\arccos(\tan 5\pi)$ $\arccos(0)$ $\frac{\pi}{2}$	18. $\arccos\left(\sin\left(-\frac{5\pi}{2}\right)\right)$ $\arccos(-1)$ $\pi$

Evaluate. (Make a sketch of a right triangle.)

19. $\cos\left[\arctan\left(-\frac{5}{7}\right)\right]$ $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ $\cos(\theta)$ $= \frac{7}{\sqrt{74}}$ $= \frac{7\sqrt{74}}{74}$ 	20. $\tan\left[\cos^{-1}\left(-\frac{5}{13}\right)\right]$ $[0, \pi]$ $\tan(\theta)$ $= -\frac{12}{5}$ 
--	--

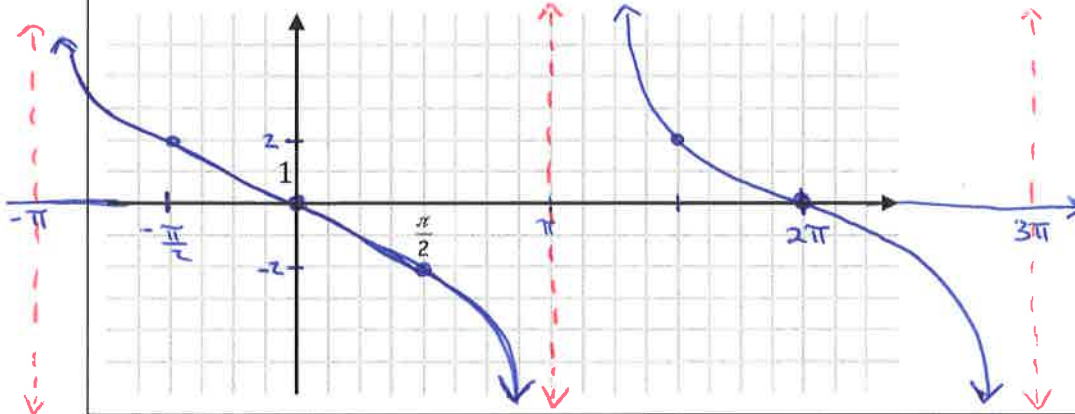
$r^2 = (7)^2 + (-5)^2$   
 $r^2 = 49 + 25$   
 $r^2 = 74$   
 $r = \sqrt{74}$

$12 = y$   
 $y^2 + 25 = 169$   
 $y^2 = 144$   
 $y = \pm 12$   
 $y = 12$

Graph each of the functions. Graph as many periods of the function that will fit on the grid provided. Also determine the period for each function.

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

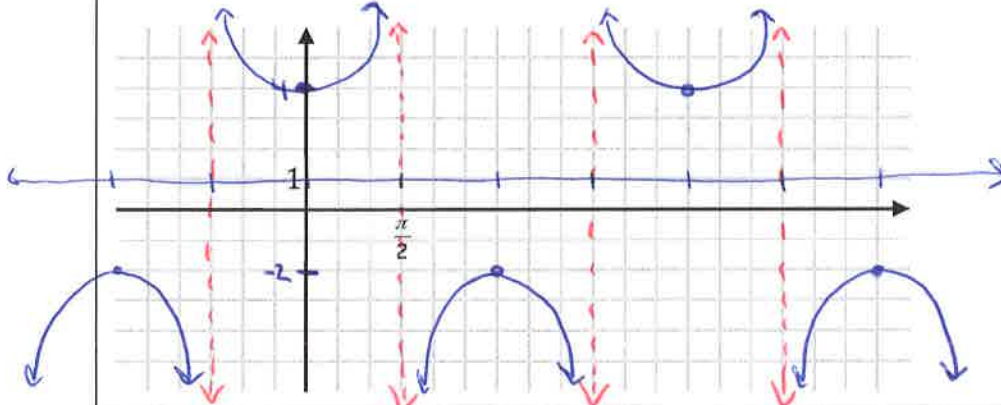
$y = -2 \tan \left( \frac{1}{2}x \right)$



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

\* Reflected over x-axis (decreases) ↕  
\* Vertical stretch

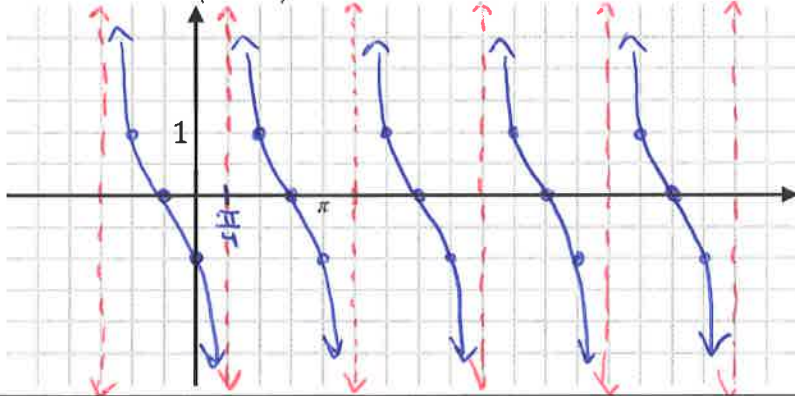
22.  $y = 3 \sec x + 1$



Period:  $2\pi$

\* Shift up 1

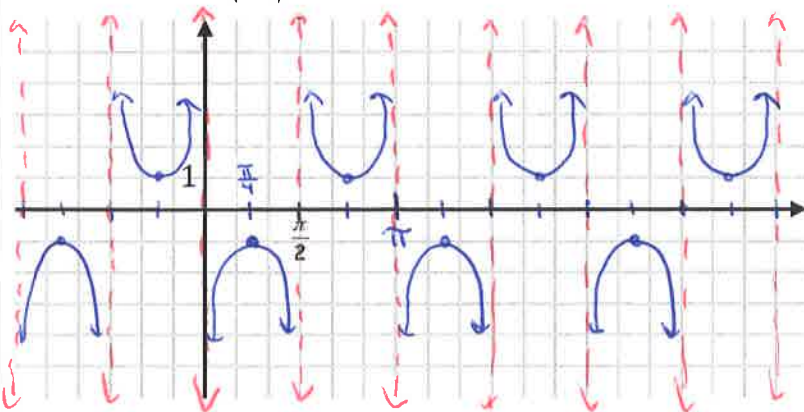
23.  $y = \cot \left( x - \frac{\pi}{4} \right)$



Period:  $\pi$

Phase shift:  $\frac{\pi}{4}$

24.  $y = -\csc(2x)$



Period:  $\frac{2\pi}{2} = \pi$

\* Reflected