

10.3 Practice – Reciprocal Trig Graphs

Name: Solutions

Pre-Calculus

For 1-12, graph the trig function.

1. $y = \sec \frac{\theta}{2}$ $\frac{1}{\cos \frac{\theta}{2}}$

Amp	Period	P.S.	V.S.
1	$\frac{2\pi}{2}$	none	none

4π

2. $y = \csc 2\theta$ $\frac{1}{\sin 2\theta}$

Amp	Period	P.S.	V.S.
1	$\frac{2\pi}{2}$	none	none

π

3. $y = 3 \csc \theta$ $\frac{1}{\sin}$

Amp	Period	P.S.	V.S.
3	2π	none	none

4. $y = 1 + \frac{1}{2} \cot \frac{\theta}{3}$ $\frac{1}{\tan}$

Amp	Period	P.S.	V.S.
$\frac{1}{2}$	$\frac{\pi}{3}$	none	up 1

3π

5. $y = \frac{1}{2} \sec \frac{\theta}{3} + 2$ $\frac{1}{\cos}$

Amp	Period	P.S.	V.S.
$\frac{1}{2}$	$\frac{2\pi}{3}$	none	up 2

6π

6. $y = 2 \sec \frac{\theta}{2} - 1$ $\frac{1}{\cos}$

Amp	Period	P.S.	V.S.
2	$\frac{2\pi}{2}$	none	down 1

4π

7. $y = 3 \csc 2\theta + 1$ $\frac{1}{\sin}$

Amp	Period	P.S.	V.S.
3	$\frac{2\pi}{2}$	none	up 1

π

8. $y = 2 \sec(2\theta + \pi) + 1$ $\frac{1}{\cos}$

$2 \sec(2(\theta + \frac{\pi}{2})) + 1$

Amp	Period	P.S.	V.S.
2	$\frac{2\pi}{2}$	left $\frac{\pi}{2}$	up 1

π

9. $y = 2 \cot(\frac{\theta}{2} - \frac{\pi}{4}) - 1$ $\frac{1}{\tan}$

$2 \cot(\frac{1}{2}(\theta - \frac{\pi}{2})) - 1$

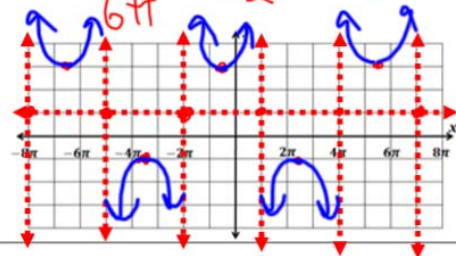
Amp	Period	P.S.	V.S.
2	$\frac{\pi}{2}$	right $\frac{\pi}{2}$	down 1

2π

$$10. y = 2 \sec\left(\frac{\theta}{3} + \frac{\pi}{6}\right) + 1$$

$$2 \sec\left(\frac{1}{3}\left(\theta + \frac{\pi}{2}\right)\right) + 1 \quad \frac{1}{\cos}$$

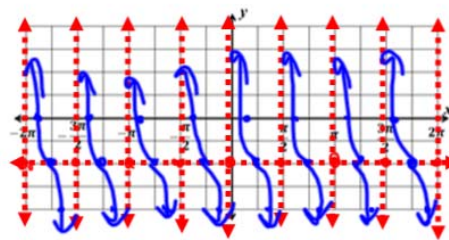
Amp 2 Period $\frac{2\pi}{\frac{1}{3}} = 6\pi$
 P.S. left $\frac{\pi}{2}$ V.S. up 1



$$11. y = 2 \cot(2\theta + \pi) - 2$$

$$2 \cot\left(2\left(\theta + \frac{\pi}{2}\right)\right) - 2 \quad \frac{1}{\tan}$$

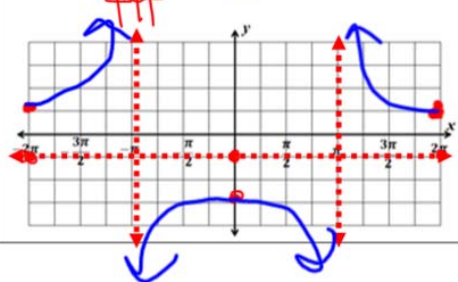
Amp 2 Period $\frac{2\pi}{2} = \pi$ P.S. left $\frac{\pi}{2}$ V.S. down 2



$$12. y = 2 \csc\left(\frac{\theta}{2} - \frac{\pi}{2}\right) - 1$$

$$2 \csc\left(\frac{1}{2}\left(\theta - \pi\right)\right) - 1 \quad \frac{1}{\sin}$$

Amp 2 Period $\frac{2\pi}{\frac{1}{2}} = 4\pi$ P.S. right $\frac{\pi}{2}$ V.S. down 1



Skillz Review: Separate Fractions

$$\frac{5x - 20}{5} = \frac{5x}{5} - \frac{20}{5}$$

$$\boxed{x - 4}$$

$$\frac{\cos x - 1}{\cos x} = \frac{\cos x}{\cos x} - \frac{1}{\cos x}$$

$$\boxed{1 - \sec x}$$

$$\frac{\sin \theta + \cos \theta}{\sin \theta} = \frac{\sin \theta}{\sin \theta} + \frac{\cos \theta}{\sin \theta}$$

$$\boxed{1 + \cot \theta}$$

Skillz Review: Multiply Fractions

$$\frac{\cancel{32} \cdot 7}{5 \cdot \cancel{32}} = \frac{7}{5}$$

$$\boxed{\frac{7}{5}}$$

$$\cancel{\sin x} \cdot \frac{1}{\cancel{\sin x}} = 1$$

$$\boxed{1}$$

$$\sin \theta \cdot \csc \theta = \cancel{\sin \theta} \cdot \frac{1}{\cancel{\sin \theta}}$$

$$\boxed{1}$$