

## PRACTICE Quiz 4.3-4.4 Sum and Difference Identities

**Simplify.**

1) 
$$\frac{\tan -4\theta - \tan -3\theta}{1 + \tan -4\theta \tan -3\theta}$$

2) 
$$\cos -3\theta \cos -6\theta - \sin -3\theta \sin -6\theta$$

3) 
$$\sin v \cos -4v - \cos v \sin -4v$$

4) 
$$\cos -2v \cos 4v + \sin -2v \sin 4v$$

**Verify each identity.**

5) 
$$\sin\left(\frac{\pi}{2} + \theta\right) = \cos \theta$$

6) 
$$\tan\left(\frac{3\pi}{4} - \theta\right) = \frac{-1 - \tan \theta}{1 - \tan \theta}$$

7) 
$$\sin\left(\frac{3\pi}{2} + \theta\right) = -\cos \theta$$

8) 
$$\cos(90^\circ - \theta) = \sin \theta$$

## PRACTICE Quiz 4.3-4.4 Sum and Difference Identities

**Simplify.**

1) 
$$\frac{\tan -4\theta - \tan -3\theta}{1 + \tan -4\theta \tan -3\theta}$$

$$\tan -\theta$$

2) 
$$\cos -3\theta \cos -6\theta - \sin -3\theta \sin -6\theta$$

$$\cos -9\theta$$

3) 
$$\sin v \cos -4v - \cos v \sin -4v$$

$$\sin 5v$$

4) 
$$\cos -2v \cos 4v + \sin -2v \sin 4v$$

$$\cos -6v$$

**Verify each identity.**

5) 
$$\sin \left( \frac{\pi}{2} + \theta \right) = \cos \theta$$

$$\sin \left( \frac{\pi}{2} + \theta \right)$$

$$= \sin \frac{\pi}{2} \cos \theta + \cos \frac{\pi}{2} \sin \theta$$

$$= \cos \theta + 0 \sin \theta$$

$$= \cos \theta$$

6) 
$$\tan \left( \frac{3\pi}{4} - \theta \right) = \frac{-1 - \tan \theta}{1 - \tan \theta}$$

$$\tan \left( \frac{3\pi}{4} - \theta \right)$$

$$\frac{\tan \frac{3\pi}{4} - \tan \theta}{1 + \tan \frac{3\pi}{4} \tan \theta}$$

$$= \frac{-1 - \tan \theta}{1 - \tan \theta}$$

$$= \frac{-1 - \tan \theta}{1 - \tan \theta}$$

$$= \frac{-1 - \tan \theta}{1 - \tan \theta}$$

7) 
$$\sin \left( \frac{3\pi}{2} + \theta \right) = -\cos \theta$$

$$\sin \left( \frac{3\pi}{2} + \theta \right)$$

$$= \sin \frac{3\pi}{2} \cos \theta + \cos \frac{3\pi}{2} \sin \theta$$

$$= -\cos \theta + 0 \sin \theta$$

$$= -\cos \theta$$

8) 
$$\cos (90^\circ - \theta) = \sin \theta$$

$$\cos (90^\circ - \theta)$$

$$= \cos 90^\circ \cos \theta + \sin 90^\circ \sin \theta$$

$$= 0 \cos \theta + \sin \theta$$

$$= \sin \theta$$