

HAT

5/14/18

Identities
Board Review

Given $\sin\theta = -\frac{8}{17}$ with $\frac{3\pi}{2} \leq \theta \leq 2\pi$, find

$$\sin 2\theta$$

$$\cos\left(\frac{\pi}{6} - \theta\right)$$

Find the exact value of each expression.

$$\sin \frac{5\pi}{8} \cdot \cos \frac{\pi}{8} - \cos \frac{5\pi}{8} \cdot \sin \frac{\pi}{8} \qquad 2\sin 15^\circ \cos 15^\circ$$

$$\tan\left(\frac{7\pi}{12}\right)$$

$$\cos \frac{11\pi}{12}$$

Prove the identity.

$$\frac{\csc \theta}{\csc \theta + 1} = \sec \theta (\sec \theta - \tan \theta)$$

Prove the identity.

$$\frac{\csc^2 \theta - \cot^2 \theta}{\sec^2 \theta} = \cos^2 \theta$$

Prove the identity.

$$\frac{\sin \theta}{1 - \cos \theta} = \csc \theta + \cot \theta$$