

Precalculus Unit 7: 7.1 Examples Using Fundamental Identities

Review from Unit 5:

Example 1: Given $\sec \theta = \frac{-13}{12}$ and $\sin \theta > 0$, find the value of the remaining 5 trigonometric functions.

$$\sin \theta = \qquad \qquad \qquad \csc \theta =$$

$$\cos \theta = \qquad \qquad \qquad \sec \theta =$$

$$\tan \theta = \qquad \qquad \qquad \cot \theta =$$

Use your identity list to simplify the following trigonometric expressions:

Example 2: $\cot x \cdot \sin x$

Example 3: $\sin \theta (\csc \theta - \sin \theta)$

Example 4: $\sec^2 x (1 - \sin^2 x)$

Example 5: $\frac{\cos^2 \theta}{1 - \sin \theta}$

Example 6: Factor and use identities to simplify $\cot^2 x - \cot^2 x \cdot \cos^2 x$

Example 7: $\tan^4 x + 2\tan^2 x + 1$

Example 8: $\csc^3 \theta - \csc^2 \theta - \csc \theta + 1$

Example 9: $(\sin x + \cos x)^2$

Example 10: $\frac{1}{1+\cos x} + \frac{1}{1-\cos x}$