Today's Learning Goal(s): By the end of the class, I will be able to:

a) prove trigonometric identities.

5.5 Trigonometric Identities (Day2)

Date: _____

Recall:

Reciprocal Identities

$$\csc\theta = \frac{1}{\sin\theta} \qquad \sec\theta = \frac{1}{\cos\theta}$$

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

Quotient Identities

$$\tan\theta = \frac{\sin\theta}{\cos\theta} \qquad \cot\theta = \frac{\cos\theta}{\sin\theta}$$

Pythagorean Identities

$$\sin^2\theta + \cos^2\theta = 1 \quad \begin{cases} \sin^2\theta = 1 - \cos^2\theta \\ \cos^2\theta = 1 - \sin^2\theta \end{cases}$$

$$\tan^2\theta + 1 = \sec^2\theta$$

$$1 + \cot^2\theta = \csc^2\theta$$

To Prove an Identity:

*** Separate the LS and RS, and work on them separately**

*** convert *tan* and reciprocal ratios to *sin* or *cos***

*** apply the Pythagorean Identity, use common denominators & factor as required**

Ex.1 Prove that $\dfrac{\sin^2 x}{1-\cos x} = 1+\cos x$

Ex.2 Prove that $\dfrac{1}{1+\sin\theta} + \dfrac{1}{1-\sin\theta} = \dfrac{2}{\cos^2\theta}$

Today's Homework Practice:

pp. 310-311 #8, 10 – 12 [14]

Worksheet a – j (***online***)