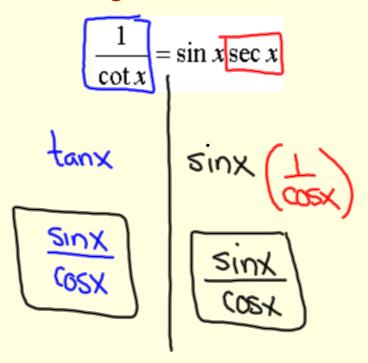
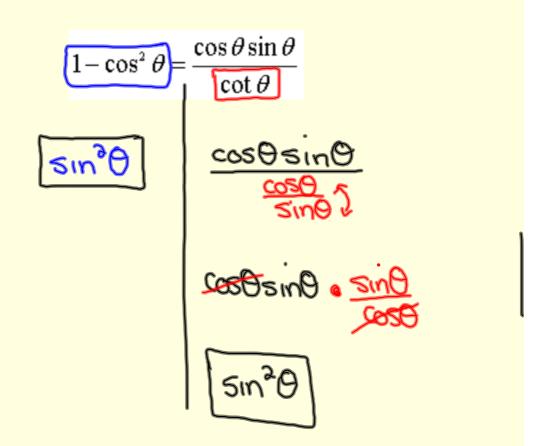
Warm Up

Prove the following identities:





Questions from last night's homework?

$$\tan\theta\cos\theta = \sin\theta$$

$$\cot\theta\sec\theta = \csc\theta$$

$$\frac{1+\cot^2\theta}{\csc^2\theta} = 1$$

$$\frac{\tan^2\theta}{1+\tan^2\theta} = \sin^2\theta$$

$$\frac{\tan^2\theta}{\sin^2\theta} = 1 + \tan^2\theta$$

$$\frac{\sin^2\theta}{\cos^2\theta} = 1 + \tan^2\theta$$

$$\frac{\sin^2\theta}{\cos^2\theta} = 1 + \tan^2\theta$$

Trig Identities

Quotient
$$\tan \theta = \frac{\sin \theta}{\cos \theta} \qquad \qquad \sin^2 \theta + \cos^2 \theta = 1$$

$$\cot \theta = \frac{\cos \theta}{\sin \theta} \qquad \qquad \tan^2 \theta + 1 = \sec^2 \theta$$

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

Reciprocal

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

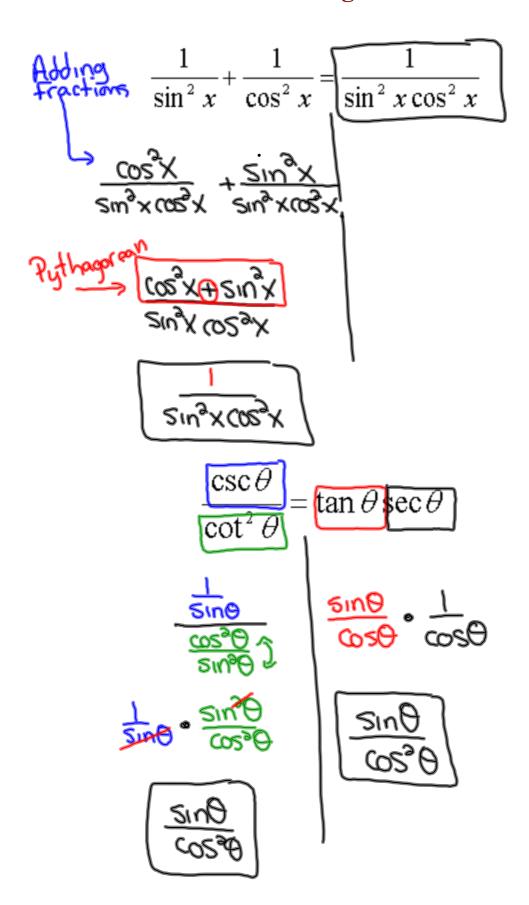
$$\sec \theta = \frac{1}{\cos \theta} \qquad \cos \theta = \frac{1}{\sec \theta}$$

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

Strategies for Proving Identities:

- Work on the most complex side and simplify so it has the same form as the simpler side
- Methods used in simplifying: direct substitution, factoring, finding a common denominator, multiplying by the conjugate

Prove the following identities:



Homework