

Ms. Milani Tutoring T-F
 After School: (M) (T) (W) (F)
In Waterloo, ON, Canada

Verifying Trig Identities (Day 2)

ex: $\frac{1}{\csc x + \cot x} + \frac{1}{\csc x - \cot x} = 2 \csc x$

$$\frac{(\csc x - \cot x) \cdot 1}{(\csc x - \cot x)(\csc x + \cot x)} + \frac{1 \cdot (\csc x + \cot x)}{(\csc x - \cot x)(\csc x + \cot x)} = 2 \csc x$$

$$\frac{\csc x - \cot x + \csc x + \cot x}{\csc^2 x + \csc x \cot x - \cot x \csc x - \cot^2 x} = 2 \csc x$$

$$\frac{2 \csc x}{\csc^2 x - \cot^2 x} = 2 \csc x$$

$$\frac{2 \csc x}{1} = 2 \csc x$$

$\frac{2 \csc x}{\csc^2 x - \cot^2 x} = 2 \csc x$

$\frac{2 \csc x}{1} = 2 \csc x$

you try: $\frac{\cos \theta}{1 + \sin \theta} + \frac{\cos \theta}{1 - \sin \theta} = 2 \sec \theta$

$$\frac{(1 - \sin \theta) \cos \theta}{(1 - \sin \theta)(1 + \sin \theta)} + \frac{\cos \theta (1 + \sin \theta)}{(1 - \sin \theta)(1 + \sin \theta)} = 2 \sec \theta$$

$$\frac{(1 - \sin \theta) \cos \theta + \cos \theta (1 + \sin \theta)}{1 - \sin^2 \theta} = 2 \sec \theta$$

$$\frac{\cos \theta - \sin \theta \cos \theta + \cos \theta + \cos \theta \sin \theta}{\cos^2 \theta} = 2 \sec \theta$$

$$\frac{2 \cos \theta}{\cos^2 \theta} = \frac{2 \cos \theta}{\cos \theta \cdot \cos \theta} = \frac{2}{\cos \theta} = 2 \sec \theta$$

Verifying Trig Identities (Day 2)

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

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

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

$$\frac{\sin \theta (1 + \cos \theta)}{\sin^2 \theta} = \frac{1 + \cos \theta}{\sin \theta} = \frac{1}{\sin \theta} + \frac{\cos \theta}{\sin \theta} = \csc \theta + \cot \theta$$

Ms. Milani Tutoring T-F 7:30-8:10
 After School: (M) (T) (W) (Th) F
In Person or Live

you try: $\frac{\tan \theta}{\sec \theta + 1} = \csc \theta - \cot \theta$

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

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

$$\frac{\tan \theta (\sec \theta - 1)}{\sec^2 \theta - 1} = \csc \theta - \cot \theta$$

$$\frac{\tan \theta (\sec \theta - 1)}{\tan^2 \theta} = \frac{\sec \theta - 1}{\tan \theta} = \frac{\sec \theta}{\tan \theta} - \frac{1}{\tan \theta} = \frac{\frac{1}{\cos \theta}}{\frac{\sin \theta}{\cos \theta}} - \frac{1}{\frac{\sin \theta}{\cos \theta}} = \frac{1}{\sin \theta} - \frac{1}{\tan \theta} = \csc \theta - \cot \theta$$