

Warm-up:

Simplify:  $\cos x + \tan x \sin x$

$$\frac{\cos x}{1} + \frac{\sin x}{\cos x} \cdot \frac{\sin x}{1}$$

$$\frac{\cos x}{1} + \frac{\sin^2 x}{\cos x}$$

$$\frac{\cos^2 x + \sin^2 x}{\cos x}$$

$$\frac{\cos x}{\cos x} = \sec x$$

Simplify:  $\frac{1 + \sec x}{\csc x}$

$$\frac{\sin x \cos x}{1} + \frac{1}{\cos x} \cdot \frac{\sin x \cos x}{1}$$

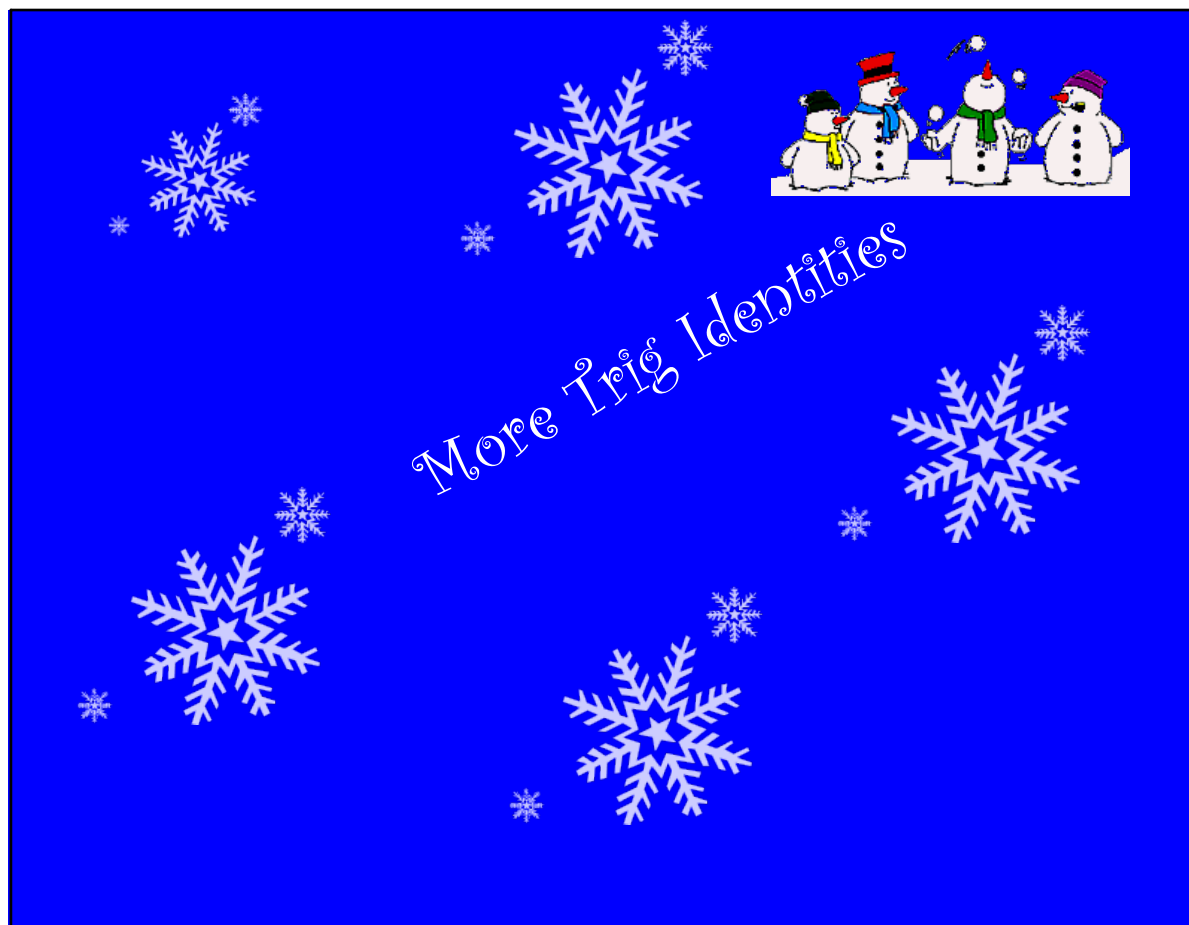
$$\frac{\sin x \cos x}{1} + \frac{\sin x}{\cos x}$$

$$\frac{\sin x \cos x + \sin x}{\cos x}$$

$$\frac{\sin x \cos x}{\cos x} + \frac{\sin x}{\cos x}$$

$$\sin x + \tan x$$

Jan 23-7:27 AM



Dec 19 - 6:30 PM

## WS 7.1

21. a.  $\frac{7}{25}$

b.  $\frac{24}{25}$

c.  $-\frac{\sqrt{10}}{10}$

d.  $\frac{3\sqrt{10}}{10}$

## WS 7.2

8.  $\sec x$

9. 1

10.  $\cot^2 x$

$$\frac{\cot^2 x}{\sec^2 x} + \frac{1}{\sec^2 x}$$

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

$$\frac{\sin^2 x \cos^2 x}{1}$$

$$\frac{1}{\sin^2 x}$$

$$= \frac{\cos^2 x}{\sin^2 x}$$

$$\frac{\sin^2 \cos^2 x}{1}$$

$$\frac{1}{\cos^2 x}$$

Jan 17-7:16 PM

Jan 30-10:09 AM

WS 7.3

$$\textcircled{7} \sec^4 x - \tan^4 x = 1 + 2\tan^2 x$$

$$(\sec^2 x + \tan^2 x)(\sec^2 x - \tan^2 x)$$

$$\sec^2 x + \tan^2 x$$

$$\tan^2 x + 1 + \tan^2 x$$

$$2\tan^2 x + 1$$

Jan 8-9:47 AM

$$\textcircled{8} \sec^2 x + \csc^2 x = \sec^2 x \csc^2 x$$

$$\frac{\sin^2 x}{\sin^2 x} \cdot \frac{1}{\cos^2 x} + \frac{1}{\sin^2 x} \cdot \frac{\cos^2 x}{\cos^2 x}$$

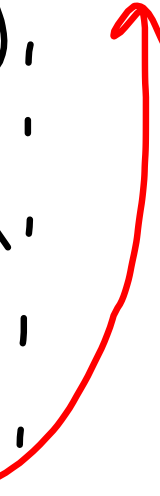
$$\frac{\sin^2 x + \cos^2 x}{\sin^2 x \cos^2 x}$$

$$\frac{1}{\sin^2 x \cos^2 x}$$

$$\frac{1}{\sin^2 x} \cdot \frac{1}{\cos^2 x}$$

$$\sec^2 x \cdot \csc^2 x$$

Jan 8-9:51 AM

$$\begin{aligned}
 & \textcircled{9} \cos^2 x (\sec x + 1)^2 : (1 + \cos x)^2 \\
 & \cos^2 x (\sec x + 1)(\sec x + 1) : \\
 & \cos^2 x (\sec^2 x + 2\sec x + 1) : \\
 & \cos^2 x \sec^2 x + 2\cos^2 x \sec x + \cos^2 x : \\
 & 1 + 2\cos x + \cos^2 x : \\
 & (1 + \cos x)^2
 \end{aligned}$$


Jan 8-9:53 AM

$$1. \quad \tan x + \cot x = \sec x \csc x$$

$$\begin{aligned}
 & \frac{\sin x}{\sin x} \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} \frac{\cos x}{\cos x} \\
 & \frac{\sin^2 x + \cos^2 x}{\sin x \cos x}
 \end{aligned}$$

Jan 4 - 7:29 AM

1.  $\tan x + \cot x = \sec x \csc x$

$$\frac{\sin x}{\cos x} + \frac{\cos x}{\sin x}$$

$$\frac{\sin^2 x + \cos^2 x}{\sin x \cos x}$$

$$\frac{1}{\sin x \cos x}$$

$$\frac{1}{\sin x} \cdot \frac{1}{\cos x}$$

$$\csc x \cdot \sec x$$

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2.  $\sec x - \tan x \sin x = \cos x$

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2.  $\sec x - \tan x \sin x = \cos x$

$$\frac{1}{\cos x} - \frac{\sin x}{\cos x} \cdot \frac{\sin x}{1} : \cos x$$

$$\frac{1}{\cos x} - \frac{\sin^2 x}{\cos x}$$

$$\frac{1 - \sin^2 x}{\cos x}$$

$$\frac{\cos^2 x}{\cos x}$$

$$\cos x$$

$$\cos x$$

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3.  $\frac{1 + \csc x}{\sec x} = \cos x + \cot x$

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3.  $\frac{1 + \csc x}{\sec x} = \cos x + \cot x$

$$\left[ \frac{1 + \frac{1}{\sin x}}{\left( \frac{1}{\cos x} \right)} \right] \frac{\cos x \sin x}{1}$$

$$\frac{\cos x \sin x + \cos x}{\sin x}$$

$$\frac{\cos x \sin x}{\sin x} + \frac{\cos x}{\sin x}$$

$$\cos x + \cot x$$

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4.  $\tan^2 x (1 + \cot^2 x) = \sec^2 x$

$$\tan^2 x \cdot \csc^2 x$$

$$\frac{\cancel{\sin^2 x}}{\cos^2 x} \cdot \frac{1}{\cancel{\sin^2 x}}$$

$$\frac{1}{\cos^2 x} = \sec^2 x$$

$$\sin^2 x + \cos^2 x = 1$$

$$\div \sin^2 x$$

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

$$\div \cos^2 x \quad \tan^2 x + 1 = \sec^2 x$$

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4.  $\tan^2 x (1 + \cot^2 x) = \sec^2 x$

$$\tan^2 x \cdot \csc^2 x$$

$$\frac{\sin^2 x}{\cos^2 x} \cdot \frac{1}{\sin^2 x}$$

$$\frac{1}{\cos^2 x}$$

$$\sec^2 x$$

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5.  $\frac{\sec x}{\cot x + \tan x} = \sin x$

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5.  $\frac{\sec x}{\cot x + \tan x} = \sin x$

Handwritten work:

$$\left[ \frac{1}{\cos x} \right] \frac{\cos x \sin x}{\cos x \sin x}$$

$$\left[ \frac{\cos x}{\sin x} + \frac{\sin x}{\cos x} \right] \frac{\cos x \sin x}{\cos x \sin x}$$

$$\frac{\sin x}{\cos^2 x + \sin^2 x}$$

$\sin x$

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6.  $\frac{1}{\sin x - 1} - \frac{1}{\sin x + 1} = -2 \sec^2 x$

Handwritten work:

$$\frac{-\sin x + 1}{\sin x + 1 - (\sin x - 1)}$$

$$\frac{2}{(\sin x - 1)(\sin x + 1)}$$

$$\frac{2}{\sin^2 x - 1}$$

$$\frac{2}{-\cos^2 x}$$

$$-2 \sec^2 x$$

Could imply that we need to factor out a -1 from one of the identities

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$$7. \quad \cos^2 x - \sin^2 x = 2\cos^2 x - 1$$

Dec 28-7:57 PM

$$8. \quad \frac{\cot^2 x}{\csc x - 1} = \frac{1 + \sin x}{\sin x}$$

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Homework 7-7: Worksheet 7.1 #22  
Worksheet 7.3 #11-14

Do all homework on a separate sheet of graph paper

Graded #12 due tomorrow

Test Friday



Jan 4-12:21 PM

HW Questions:

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