

Warm-up:

Simplify $\tan x + \cot x$

Jan 23-7:25 AM

Identities & Proof



Jan 3 - 7:15 AM

Worksheet 7.2

1. $\sin^2 x - \cos^2 x$

2. $\sin x - \sec x$

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

4. $\cos^2 x$

5. $(\tan x - \cot x)(\tan x + \cot x)$

6. $(\sin x - \cos x)(\sin x + \cos x)$

7. $(\sin x + 3)(\sin^2 x - 3\sin x + 9)$



$$\begin{aligned} & \tan x (\cos x - \csc x) \\ & \tan x \cos x - \tan x \csc x \\ & \frac{\sin x}{\cos x} \cdot \cos x - \frac{\sin x}{\cos x} \cdot \frac{1}{\sin x} \end{aligned}$$

Jan 22-3:17 PM

Warm-Up: Simplify

1. $\frac{\cot x}{\csc x}$

2. $\frac{\csc x - \sin x}{\cos x}$

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TRIG IDENTITIES

- Work on the more complicated side
- Substitute to get expressions in terms of sin and cos
 - Factor, find common denominators
- Look for Pythagorean identities when terms are squared and have 1 in the expression
- This is not an equation – do not move terms from 1 side to the other or try to multiply or divide both sides by any terms

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$$\tan x \cos x = \sin x$$

Handwritten diagram illustrating the identity $\tan x \cos x = \sin x$. The expression $\frac{\sin x}{\cos x} \cdot \cos x$ is shown, with the $\cos x$ terms canceling out to result in $\sin x$. A red vertical line and a blue arrow indicate the cancellation process.

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$$\tan x \csc x = \sec x$$

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

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

$$\sec x$$

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$$\frac{\tan x}{\sec x} = \sin x$$

Complex Fraction (LCD)

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

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

$$\sin x$$

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$$\sin^2 x - \tan^2 x = -\sin^2 x \tan^2 x$$

$$\left(\frac{\cos^2 x}{\cos^2 x}\right) \frac{\sin^2 x}{1} - \frac{\sin^2 x}{\cos^2 x}$$

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

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

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

$$\tan^2 x \cdot -\sin^2 x$$

$$-1(1 - \cos^2 x)$$

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* sin/cos

* pythagorean identity

$$\sec^2 x - \csc^2 x = \tan^2 x - \cot^2 x$$

$$1 + \tan^2 x - (1 + \cot^2 x)$$

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

$$\tan^2 x - \cot^2 x$$

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Homework 7-6

Worksheet 7.1 #21

Worksheet 7.3 #1-10 omit 8¹/₉
Worksheet 7.2 8-10
Test Friday

Graded #12 due Thursday

Jan 6-8:34 AM

Jan 22-3:54 PM