

November 9

SWBAT:

Use trig identities to  
verify equations



show:

$$\sin x + \cos x(\cot x) = \csc x$$

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$$\sin x + \frac{\cos x}{1} \left( \frac{\cos x}{\sin x} \right) = \csc x$$

← quotient identity

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

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

Common denominator

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

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

Pythagorean identity →  $\frac{1}{\sin x} = \csc x$

reciprocal identity →  $\csc x = \csc x$