

Verifying Trig Identities

- work on only one side
- work on the most complicated side
- Try... - changing to sin & cos
 - + / - fractions
 - distributing

ex: $\tan x \sin x + \cos x = \sec x$

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

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

$$\frac{\sin^2 x + \cos^2 x}{\cos x} = \frac{1}{\cos x} = \sec x \quad \text{😊}$$

ex: $\cos x (\csc x + \sin x \sec^2 x) = \frac{\sec x}{\sin x}$

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

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

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

$$\frac{\cos^2 x + \sin^2 x}{\cos x \cdot \sin x} = \frac{1}{\cos x \cdot \sin x} = \frac{\sec x}{\sin x} \quad \text{😊}$$