

Verifying Trigonometric Identities

Algebraically verify each of the Following Identities:

$$1. \cot x \tan x = 1$$

$$2. \csc x \cos x = \cot x$$

$$3. \frac{\sin x}{\tan x} = \cos x$$

$$4. \frac{1}{\cot x \cos x \tan x} = \sec x$$

$$5. \frac{\tan x}{\csc x} = \frac{\sin^2 x}{\cos x}$$

$$6. \frac{\tan x}{\sec x} = \sin x$$

$$7. \frac{\cos^2 x}{\cot x} = \sin x \cos x$$

$$8. \frac{\sec x \csc x}{\cot x} = \sec^2 x$$

$$9. \frac{\sec x \csc x}{\csc^2 x} = \tan x$$

$$10. \frac{\tan^2 x \cos x}{2 \sec x} = \frac{1}{2} \sin^2 x$$