

Summary: Quotient rule

The quotient rule

If $h(x) = \frac{f(x)}{g(x)}$ for all x , then

$$h'(x) = \frac{f'(x)g(x) - f(x)g'(x)}{g(x)^2}$$

at all points where f and g are differentiable and $g(x) \neq 0$.

Derivatives of all trigonometric functions

$$\frac{d}{dx} \sin x = \cos x$$

$$\frac{d}{dx} \cos x = -\sin x$$

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

$$\frac{d}{dx} \cot x = -\frac{1}{\sin^2 x} = -\csc^2 x$$

$$\frac{d}{dx} \sec x = \frac{\sin x}{\cos^2 x} = \sec x \tan x$$

$$\frac{d}{dx} \csc x = -\frac{\cos x}{\sin^2 x} = -\csc x \cot x$$