

Chain Rule (3.7)

$$\text{Given } f(x) = g(x)$$

Derivatives Using the Chain Rule: Differentiate the function using the chain rule.

1. $f(x) = 3 \tan^2 x$

2. $y = -2x^2 + \sqrt{x^2 - 2}$

3. $g(x) = \ln \cos x$

4. $s(t) = \frac{e^{3 \sin t}}{5t^2}$

Derivatives Using the Chain Rule: Differentiate the function using the chain rule.

5. $a = \sqrt{\tan(2p+3)}$

6. $V = 4x^2e^{4x-3}$

Verifying a Trigonometric Derivative: Verify that $y = \sec x$ is equal to $y' = \sec x \tan x$ two ways.

7. $y = \sec x$ **Quotient Rule**

7. $y = \sec x$ **Chain Rule**