

DERIVADAS

Problema 47:

Hallar la derivada de:

$$y = \text{Ln} \frac{1 + x^2}{1 - x^2}$$

Solución Problema 47:

$$y = \text{Ln} \frac{1 + x^2}{1 - x^2}$$

$$y' = \frac{\frac{2x(1 - x^2) - [-2x(1 + x^2)]}{(1 - x^2)^2}}{\frac{1 + x^2}{1 - x^2}}$$

$$y' = \frac{\frac{2x - 2x^3 - [-2x - 2x^3]}{(1 - x^2)^2}}{\frac{1 + x^2}{1 - x^2}}$$

$$y' = \frac{\frac{2x - 2x^3 + 2x + 2x^3}{(1 - x^2)^2}}{\frac{1 + x^2}{1 - x^2}}$$

$$y' = \frac{\frac{4x}{(1 - x^2)^2}}{\frac{1 + x^2}{1 - x^2}}$$

$$y' = \frac{4x(1 - x^2)}{(1 + x^2)(1 - x^2)^2}$$

$$y' = \frac{4x}{(1 + x^2)(1 - x^2)}$$

$$y' = \frac{4x}{(1 - x^4)}$$