0221 Cálculo

Ejercicio GitHub (12 de Junio, 2021)

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1. George B. Thomas,Joel R Hass,Christopher.Sección 3.6,Pág 145

write the function in the form y = f(u) and u = g(x). Then find dy/dx as a function of x.

$$y = (\frac{x^2}{8} + x - \frac{1}{x})^4 \tag{13.}$$

Solution:

$$y = \left(\frac{x^2}{8} + x - \frac{1}{x}\right)^4 = y = f(u) = u^4; u(x) = \frac{x^2}{8} + x - \frac{1}{x}$$

$$\frac{dy}{dx} = 4u^3 \cdot \left(\frac{x}{4} + \frac{1}{x^2} + 1\right)$$

$$= 4\left(\frac{x^2}{8} + x - \frac{1}{x}\right)^3 \cdot \left(\frac{x}{4} + \frac{1}{x^2} + 1\right)$$

$$= \left(\frac{4x}{4} + \frac{4}{x^2} + 4\right) \cdot \left(\frac{x^2}{8} + x - \frac{1}{x}\right)^3$$

Link coding fuente:
https://es.overleaf.com/read/jhhpcjvskbhx

Referencias