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Materia:
Calculo

Docente:
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Cuatrimestre:
4

Fecha:
31/10/2024

$$13 = h(x) = (5x - 1)(x^2 + 2x + 3)$$

$$dU = \frac{d}{dx}(5x - 1) = 5$$

$$dV = \frac{d}{dx}(x^2 + 2x + 3) = 2x + 2$$

$$= (5x - 1)(2x + 2) + (x^2 + 2x + 3)(5)$$

$$= 10x^2 - 2x + 10x - 2 + 5x^2 + 10x + 15$$

$$= 10x^2 + 5x^2 + 10x + 10x - 2x + 15 - 2$$

$$= 15x^2 + 18x + 13$$

$$14 = P(x) = (4x + 6)(x^3 - 2x + 1)$$

$$dU = \frac{d}{dx}(4x + 6) = 4$$

$$dV = \frac{d}{dx}(x^3 - 2x + 1) = 3x^2 - 2$$

$$= (4x + 6)(3x^2 - 2) + (x^3 - 2x + 1)(4)$$

$$= 12x^3 + 18x^2 - 8x - 12 + 4x^3 - 8x + 4$$

$$= 12x^3 + 4x^3 + 18x^2 - 8x - 8x - 12 + 4$$

$$= 16x^3 + 18x^2 - 16x - 8$$

$$15. \quad q(x) = (x-2)(3x^2+x-4)$$

$$du = \frac{d}{dx}(x-2) = 1$$

$$dv = \frac{d}{dx}(3x^2+x-4) = 6x+1$$

$$= (x-2)(6x+1) + (3x^2+x-4)(1)$$

$$= 6x^2 - 12x + 1x - 2 + 3x^2 + 1x - 4$$

$$= 6x^2 + 3x^2 - 12x + 1x + 1x - 4 - 2$$

$$= 9x^2 - 10x + 6$$

$$16. \quad f(x) = \frac{3x-2}{x^2+1}$$

$$u = 3x-2$$

$$v = x^2+1$$

$$du = 3$$

$$dv = 2x$$

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

$$\frac{3x^2+3 - [6x^2-4x]}{(x^2+1)^2}$$

$$\frac{3x^2+3 - 6x^2+4x}{(x^2+1)^2} = \frac{-3x^2+4x+3}{(x^2+1)^2}$$

