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GRUPO: A

GRADO: 4°

MATERIA: Calculo

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$$f(x) = \frac{5}{x^5} = 5(x^{-5}) = 5(-5x^{-5-1}) = -25x^{-6}$$

$$= \frac{-25}{x^6}$$

$$f(x) = \frac{5}{x^5} + \frac{3}{x^2}$$

$$= 5(x^{-5}) + 3(x^{-2})$$

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

$$= -25x^{-6} - 6x^{-3}$$

$$= \frac{-25}{x^6} - \frac{6}{x^3}$$

$$f(x) = \sqrt{x} = (x)^{1/2} = \frac{1}{2}x^{1/2-1} = \frac{1}{2}x^{-1/2}$$

$$= \frac{1}{2\sqrt{x}}$$

$$f(x) = \frac{1}{\sqrt{x}} = \frac{1}{(x)^{1/2}} = x^{-1/2} = -\frac{1}{2}x^{-1/2-1} = -\frac{1}{2}x^{-3/2}$$

$$= -\frac{1}{2\sqrt{x^3}}$$

$$f(x) = \frac{1}{x \cdot \sqrt{x}} = \frac{1}{x^1 \cdot x^{1/2}} = \frac{1}{x^{1+1/2}} = \frac{1}{x^{3/2}} = x^{-3/2} = -\frac{3}{2}x^{-3/2-1}$$

$$= -\frac{3}{2}x^{-5/2}$$

$$= \frac{-3}{2\sqrt{x^5}}$$

$$f(x) = \sqrt[3]{x^2} + \sqrt{x} = x^{2/3} + x^{1/2} = \frac{2}{3}x^{2/3-1} + \frac{1}{2}x^{1/2-1}$$

$$= \frac{2}{3}x^{-1/3} + \frac{1}{2}x^{-1/2}$$

$$= \frac{2}{3}x^{-1/3} + \frac{1}{2}x^{-1/2}$$

$$= \frac{2}{3\sqrt[3]{x}} + \frac{1}{2\sqrt{x}}$$

$$f(x) = \frac{(x^2+3x-2)^{4/3}}{3} = nu^{n-1} \frac{du}{dx}$$

$$= 4(x^2+3x-2)^{4/3-1} \cdot (2x+3)$$

$$= 4(x^2+3x-2)^{1/3} \cdot (2x+3)$$

$$f(x) = \sqrt{x^2 - 2x + 3} = (x^2 - 2x + 3)^{1/2} = u^a =$$

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

$$= \frac{2x - 2}{2 \sqrt{x^2 - 2x + 3}}$$

$$f(x) = \sqrt[4]{x^5 - x^3 - 2} = (x^5 - x^3 - 2)^{1/4}$$

$$= \frac{1}{4} (x^5 - x^3 - 2)^{1/4 - 1} \cdot (5x^4 - 3x^2)$$

$$= \frac{5x^4 - 3x^2}{4 \sqrt[4]{(x^5 - x^3 - 2)^3}}$$

$$f(x) = 5 \quad \frac{d_x(5)}{d_x} = \emptyset$$

$$f(x) = -2x \quad \frac{d_x(-2x)}{d_x} = -2 \frac{d_x}{d_x} = -2$$

$$f(x) = -2x + 2 \quad \frac{d_x(-2x + 2)}{d_x} = -2 \frac{d_x}{d_x} + \frac{d_x 2}{d_x}$$

$$= -2$$

$$f(x) = -2x^2 - 5 = -2 \frac{d_x(-2x^2)}{d_x} = \frac{d_x}{d_x}$$

$$= \frac{-2(2x^{2-1})}{d_x} = -4x^1 = -4x$$

$$f(x) = 2x^4 + x^3 - x^2 + 4$$

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

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

$$f(x) = \frac{x^3 + 2}{3} = \frac{x^3}{3} + \frac{2}{3}$$

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

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

$$= \frac{-2}{3x^3} \quad \checkmark$$

$$f(x) = \frac{u}{v} = \frac{u}{v} = \frac{v \left(\frac{du}{dx} \right) - u \left(\frac{dv}{dx} \right)}{v^2}$$

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

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

$$= \frac{-2}{(x-1)^2} \quad \checkmark$$

$$f(x) = (5x^2 - 3)(x^2 + x + 4)$$

$$= 5x^4 + 5x^3 + 20x^2 - 3x^2 - 3x - 12$$

$$= 5x^4 + 5x^3 + 20x^2 - 3x^2 - 3x - 12$$

$$= 5x^4 + 5x^3 + 17x^2 - 3x - 12$$

$$= 5(4x^{4-1}) + 5(3x^{3-1}) + 17(2x^{2-1}) - 3$$

$$= 20x^3 + 15x^2 + 34x - 3 \quad \checkmark$$