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Actividad de plataforma 3

Materia: Cálculo

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$$Y = 2X^3 - 6X^2 - 7X + 11$$

$$Y = 2(X^3 + 3X^2\Delta X + 3X\Delta X^2 + \Delta X^3) - 6(X^2 + 2X\Delta X + \Delta X^2) - 7(X + \Delta X) + 11$$

$$Y = \boxed{2X^3} + 6X^2\Delta X + 6X\Delta X^2 + 2\Delta X^3 \boxed{-6X^2} - 12X\Delta X - 6\Delta X^2 \boxed{-7X} - 7\Delta X + \boxed{11}$$

$$Y + \frac{\Delta Y}{\Delta X} = \frac{6X^2\Delta X + 6X\Delta X^2 + 2\Delta X^3 - 12X\Delta X - 6\Delta X^2 - 7\Delta X}{\Delta X}$$

$\Delta X$

$\Delta X$

$$\frac{\Delta Y}{\Delta X} = 6X^2 + 6X\Delta X + 2\Delta X^2 - 12X - 6\Delta X - 7 \quad \lim_{\Delta X \rightarrow 0}$$

$\Delta X$

$$\frac{\Delta Y}{\Delta X} = 6X^2 - 12X - 7$$

$\Delta X$

$$Y = 11 / 4x^3 + 7 / 3x^2$$

$$Y + \Delta y = 11 / 4 (x + \Delta X)^3$$

$$Y + \Delta y = 11 / 4 (x^3 + 3x^2\Delta X + 3x\Delta X^2 + \Delta X^3)$$

$$-Y + Y + \Delta y = 11 / 4x^3 + 12x^2\Delta X + 12x\Delta X^2 + 4\Delta X^3 - 11 / 4x^3$$

$$\Delta y = 44x^3 - 44x^3 - 132x^2\Delta X - 132x\Delta X^2 - 44\Delta X^3 / (4x^3 + 12x^2\Delta X + 12x\Delta X^2 + 4\Delta X^3) (4x^3)$$

$$\underline{\Delta y} = -132x^2\Delta X - 132x\Delta X^2 - 44\Delta X^3 / (4x^3 + 12x^2\Delta X + 12x\Delta X^2 + 4\Delta X^3) (4x^3)$$

$$\Delta X \quad \text{ENTRE } \Delta X$$

$$\underline{\Delta y} = -132x^2 - 132x\Delta X^2 - 44\Delta X^3 / (4x^3 + 12x^2\Delta X + 12x\Delta X^2 + 4\Delta X^3) (4x^3)$$

$$\Delta X \quad \lim \Delta X \longrightarrow 0$$

$$\underline{\Delta Y} = \underline{132x^2 - 44}$$

$$\Delta X \quad (4x^3)^2$$

$$Y + \Delta y = 7 / 3 (x + \Delta X)^2$$

$$Y + \Delta y = 7 / 3 (x^2 + 2x\Delta X + \Delta X^2)$$

$$-Y + Y + \Delta y = 7 / 3x^2 + 6x\Delta X + 3\Delta X^2 - 7 / 3x^2$$

$$\Delta y = 21x^2 - 21x^2 - 42x\Delta X - 21\Delta X^2 / (3x^2 + 6x\Delta X + 3\Delta X^2) (3x^2)$$

$$\underline{\Delta y} = \underline{-42x\Delta X - 21\Delta X^2} \quad \text{ENTRE } \Delta X$$

$$\Delta X \quad (3x^2 + 6x\Delta X + 3\Delta X^2) (3x^2)$$

$$\underline{\Delta Y} = \underline{-42x - 21\Delta X} \quad \lim \Delta X \longrightarrow 0$$

$$\Delta X \quad (3x^2) (3x^2)$$

$$\underline{\Delta Y} = \underline{-42x}$$

$$\Delta X \quad (3x^2)^2$$

$$Y = 11 - 2X^2 - 6X^3$$

$$Y = 11 - 2X^2 - 4X\Delta X - 2\Delta X^2 - 6X^3 - 18X^2\Delta X - 18X\Delta X^2 - 6\Delta X^3$$

$$\frac{\Delta Y}{\Delta X} = -4X\Delta X - 2\Delta X^2 - 18X^2\Delta X - 18X\Delta X^2 - 6\Delta X^3 \quad \text{ENTRE } \Delta X$$

$\Delta X$

$$\frac{\Delta Y}{\Delta X} = -4X - 2\Delta X - 18X^2 - 18X\Delta X - 6\Delta X^2 \quad \lim \Delta X \longrightarrow 0$$

$\Delta X$

$$\frac{\Delta Y}{\Delta X} = -4X - 18X^2$$

$\Delta X$

$$Y = X / (X^2 - 8X)$$

$$Y = 1 / X (X - 8) = 1 / X + 8$$

$$Y = 1 / (X + \Delta X) + 8$$

$$Y = 1 / X + \Delta X + 8 - 1 / X + 8$$

$$Y = X + 8 - X - \Delta X - 8 / (X + \Delta X + 8) (X + 8)$$

$$Y = - \Delta X / (X + \Delta X + 8) (X + 8) (\Delta X)$$

$$Y = 1 / (X + \Delta X + 8) (X + 8) (\Delta X)$$

$$\underline{\Delta Y} = 1 / (X + 8) (X + 8)$$

$$\Delta X$$

$$\underline{\Delta Y} = \underline{\quad 1}$$

$$\Delta X \quad (X + 8)^2$$

$$Y = 5 / (3X - 4)$$

$$Y = 5 / 3(X + \Delta X) - 4$$

$$Y + \Delta Y = 5 / 3X + 3\Delta X - 4$$

$$Y + \Delta Y = 5 / 3X + 3\Delta X - 4 \quad - \quad 5 / 3X - 4$$

$$-Y + Y + \Delta Y = \frac{15X - 20 + 15X + 15\Delta X - 20}{(3X + 3\Delta X - 4) \quad (3X - 4)}$$

$$\Delta Y / \Delta X = 15\Delta X / (3X + 3\Delta X - 4) \quad (3X - 4)$$

$$\Delta Y / \Delta X = 15\Delta X / (3X + 3\Delta X - 4) \quad (3X - 4) \quad \text{ENTRE } \Delta X$$

$$\Delta Y / \Delta X = 15 / (3X + 3\Delta X - 4) \quad (3X - 4) \quad \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = 15 / (3X - 4) \quad (3X - 4)$$

$$\Delta Y / \Delta X = 15 / (3X - 4)^2$$

$$Y = (3X + 2) / (2X - 1)$$

$$Y = 3X + 3\Delta X + 2 / 2X + 2\Delta X - 1 \quad - \quad 3X + 2 / 2X - 1$$

$$Y = 6X + 6\Delta X - 3X + 4X + 4\Delta X - 2 + 6X + 6\Delta X + 4X - 3X - 3\Delta X - 2 / (2X + 2\Delta X - 1) (2X - 1)$$

$$\Delta Y / \Delta X = 4\Delta X + 3\Delta X / (2X + 2\Delta X - 1) (2X - 1) \quad \text{ENTRE } \Delta X$$

$$\Delta Y / \Delta X = 4 + 3 / (2X + 2\Delta X - 1) (2X - 1) \quad \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = 7 / (2X - 1)^2$$

$$Y = (3X^2 + 1) / (2X)$$

$$Y + \Delta Y = 3X(X + \Delta X)^2 + 2 / 2(X + \Delta X)$$

$$Y + \Delta Y = 3(X^2 + 2X\Delta X + \Delta X^2) + 2 / 2X + 2\Delta X$$

$$Y + \Delta Y - Y = 3X^2 + 6X\Delta X + 3\Delta X^2 + 2 / 2X + 2\Delta X - 3X^2 + 2/2X$$

$$\Delta Y = 3X^2 + 6X\Delta X + 3\Delta X^2 + 2 / 2X + 2\Delta X - 3X^2 + 2/2X$$

$$\Delta Y = 6X^3 + 12X^2\Delta X + 6X\Delta X^2 + 4X - 6X^3 - 6X^2\Delta X - 4X - 4\Delta X / (2X + 2\Delta X) (2X)$$

$$\Delta Y / \Delta X = 12X^2\Delta X + 6X\Delta X^2 - 6X^2\Delta X - 4\Delta X / (2X + 2\Delta X) (2X) \text{ ENTRE } \Delta X$$

$$\Delta Y / \Delta X = 12X^2 + 6X\Delta X - 6X^2 - 4 / (2X + 2\Delta X) (2X) \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = 12X^2 - 6X^2 - 4 / (2X)^2$$

$$Y = 5 / (4 + X^2)$$

$$Y + \Delta Y = 5 / 4 + (X + \Delta X)^2$$

$$Y - Y + \Delta Y = 5 / 4 + (X + \Delta X)^2 - 5 / (4 + X^2)$$

$$\Delta Y = 20 + 5X^2 - 5(4 + X^2 + 2X\Delta X + \Delta X^2) / (4 + (X + \Delta X)^2) (4 + X^2)$$

$$\Delta Y = 20 + 5X^2 - 20 - 5X^2 - 10X\Delta X - 5\Delta X^2 / (4 + (X + \Delta X)^2) (4 + X^2)$$

$$\Delta Y = -\Delta X(10X - 5\Delta X) / (4 + (X + \Delta X)^2) (4 + X^2)$$

$$\Delta Y / \Delta X = -\Delta X(10X - 5\Delta X) / \Delta X (4 + (X + \Delta X)^2) (4 + X^2) \text{ ENTRE } \Delta X$$

$$\Delta Y / \Delta X = -(10X - 5(0)) / (4 + (X + 0)^2) (4 + X^2) \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = -10X / (4 + X^2) (4 + X^2)$$

$$\Delta Y / \Delta X = -10X / (4 + X^2)^2$$

$$Y = (1+2X)^2$$

$$Y = 1 + 4X$$

$$Y = 1 + 4X + 4\Delta X - 1 - 4X$$

$$Y = 4\Delta X - \Delta X$$

$$\Delta Y / \Delta X = 4$$

$$Y = 3/5X^2 - 3/4X + 1/8$$

$$Y + \Delta Y = 3/5(X^2 + 2X\Delta X + \Delta X^2)$$

$$\Delta Y = 3/5(X^2 + 10X\Delta X + 5\Delta X^2) - 3/5X^2$$

$$\Delta Y = 15X^2 - 15X^2 - 30X\Delta X - 15\Delta X^2 / (5X^2 + 10X\Delta X + 5\Delta X^2) (5X^2)$$

$$\Delta Y / \Delta X = -30X\Delta X - 15\Delta X^2 / (5X^2 + 10X\Delta X + 5\Delta X^2) (5X^2) \text{ ENTRE } \Delta X$$

$$\Delta Y / \Delta X = -30X - 15\Delta X / (5X^2 + 10X\Delta X + 5\Delta X^2) (5X^2) \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = -30X / (5X^2)^2$$

$$Y + \Delta Y - Y = -3/4X + 4\Delta X - 3/4X$$

$$\Delta Y = 12X - 12X - 12\Delta X / (4X + 4\Delta X) (4X)$$

$$\Delta Y / \Delta X = -12\Delta X / (4X + 4\Delta X) (4X) \text{ ENTRE } \Delta X$$

$$\Delta Y / \Delta X = -12 / (4X + 4\Delta X) (4X) \lim \Delta X \longrightarrow 0$$

$$\Delta Y / \Delta X = -12 / (4X)^2$$

$$\Delta Y / \Delta X = -30X / (5X^2)^2 - 12 / (4X)^2$$