Alumna: Ingrid Renata López Fino

Tema: DERIVADAS

Parcial: 2

Materia: Biomatematicas

Profesor: Leyber Bersain Martínez Vázquez

Licenciatura: Medicina Humana

Cuatrimestre: Segundo

BIOMATEMATICAS.

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Profesor: Leyber Bracain Martinez Vázquez.

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

$$\frac{dy}{dx} = \frac{V\frac{dv}{dx} - U\cdot\frac{d}{dx}}{v^2} = \frac{(1+2x^2)(1) - 2y(1+4x)}{(1+2x^2)^2}$$

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

2.- $y = U^6 \quad U = 1+2\sqrt{x}$

$$\frac{d}{dU}x^n = nx^{n-1} \qquad 6x^{6-1} = 6x^5$$

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

3.- $y = \ln(ax+b)$

$$\left.\begin{matrix} U = ax+b \\ U' = a \end{matrix}\right\} \quad \frac{\frac{d}{dx}a}{ax+b} = \frac{a}{ax+b}$$

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4:- $y = \ln x^3$

$$\frac{\frac{d}{dx} x^3}{x^3} = \frac{3x^2}{x^3} \;//$$

5:- $y = 4x^2\sqrt{x^2-1}$

$u = 4(2x^{2-1}) = 8x$

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

$$\frac{dy}{du} \cdot \frac{du}{dx} = \frac{d}{du}(8x) \cdot \frac{d}{dx}\left(\frac{2x}{2\sqrt{x-1}}\right)$$

$$\frac{8x}{1} \cdot \frac{2x}{2\sqrt{x-1}} = \frac{16x^2}{2\sqrt{x-1}} = \frac{8x^2}{\sqrt{x-1}} = \frac{16x}{\sqrt{x-1}} \;//$$

6:- $y = \frac{a-y}{a+y}$

$u = (a+y)$
$u' = 0-1 = -1$

$v = (a+y)$
$v' = 1$

$$\frac{dy}{dx} = \frac{(a+y)\frac{du}{dx}(-1) - (a-y)\frac{du}{dx}(1)}{(a+y)^2}$$

$$= \frac{(a+y)(-1) - (a-y)(1)}{a+y^2}$$

$$= \frac{\cancel{a}+y-\cancel{a}+y}{(a+y)^2} = \frac{2y}{(a+y)^2} \;//$$

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