



**CÉSAR FELIPE MORALES SOLÍS**

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**FIRMAS**

**BIOMATEMATICAS**

**2**

**A**

Biomatemáticas

$$EB = 17 + 10(7.193 - 7.4) - 24$$

$$10(-0.207) - 24$$

$$17 + -2.07 - 24$$

EB = -9.57

$$EB = 15.2 + 10(7.156 - 7.4) - 24$$

$$-2.44 - 24$$

EB = -11.24

El exceso de baseado si esta negativo depleta

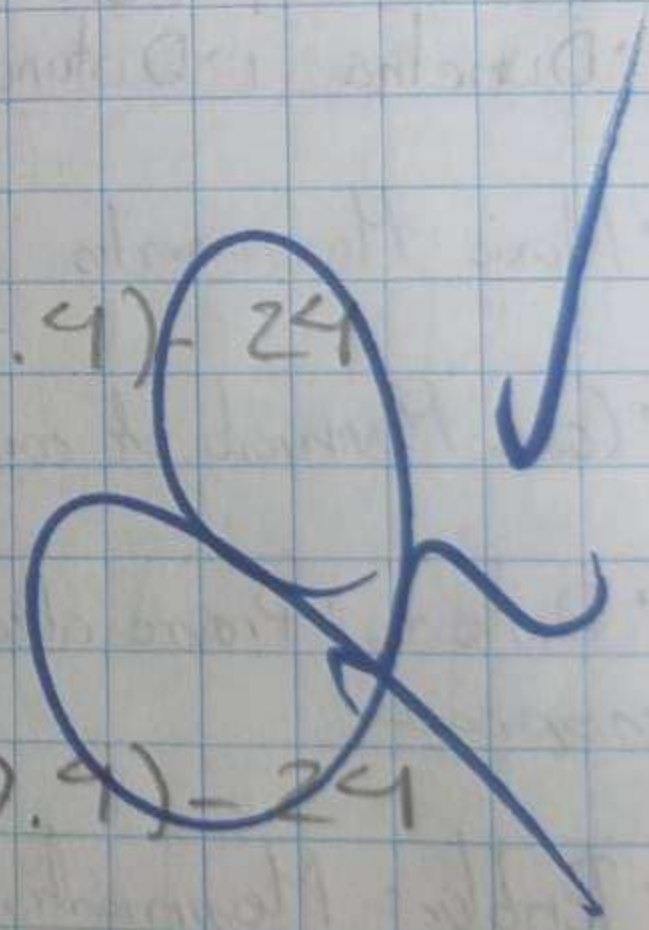
EB = HCO3- + 10(PH - 7.4) - 24

1. - Bcccf → -31.6  
Bcb → -29.2

$$1.4 + 10(6.916 - 7.4) - 24$$

$$+1.4 - 4.84 - 24$$

$$-27.44$$



2. - Dcccf → -29.1  
Deb → -25.8

Ph = 7.051  
HCO3- = 1.7

$$1.7 + 10(7.051 - 7.4) - 24$$

$$+1.7 - 3.49 - 24$$

$$-25.79$$

3. - Jcccf → -18.0  
- Bcb → -14.9

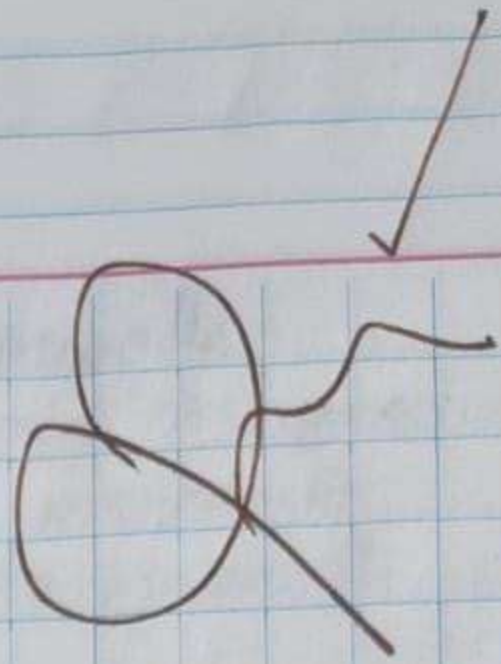
Ph → 7.293  
HCO3- = 8.9

$$8.9 + 10(7.293 - 7.4) - 24$$

$$+8.9 - 1.07 - 24$$

$$= -16.17$$

$$5 \quad 1) f(x) = (7x^4 + 4x) + (6x^3 - 2x^2) \\ (14x + 4) + (18x^2 - 4x)$$



$$5 \quad 2) f(x) = (2x^3 - 4x^4) + (2x^2 + x) \\ (6x^2 - 8x) + (4x + 1)$$

$$5 \quad 3) f(x) = (9x^2 + 3x) + (x^3 + x^2) \\ (18x + 3) + (3x^2 + 2x)$$

$$4) f(x) = \frac{8x^5 - 6x^3 - 4}{2x^4} \cdot \frac{48x^5 - 18x^2}{8x^3}$$

$$48x^5 - 18x^2(2x^4) - 8x^3(8x^5 - 6x^3 - 4)$$

$$\frac{96x^9 - 36x^6 - 64x^8 + 48x^6 + 32x^3}{32x^9 + 12x^6 + 32x^3}$$

$$\frac{(2x^4)^2}{(2x^4)^2}$$

$$5) f(x) = \frac{2x^3 - x^2}{6x^2 + x + 2} \cdot \frac{6x^2 - 7x}{12x + 1}$$

$$6x^2(2x)(6x^2 + x + 2) - (12x + 1)(2x^3 - x^2)$$

$$\frac{36x^4 + 6x^3 + 12x^2 - 12x^3 - 2x^2 - 4x - 2x}{29x^4 - 12x^3 + 2x^2 - x^2}$$

$$\frac{36x^4 - 6x^3 + 10x^2 - 4x - 2x}{29x^4 - 12x^3 + 2x^2 - x^2}$$

$$\frac{12x^4 + 4x^3 + 11x^2 - 4x}{(6x^2 + x + 2)^2}$$

Ejercicio

$$\begin{aligned} 1) f(x) &= 3x^2 \\ 3(2x^{2-1}) \\ 3(2x) \\ 6x \end{aligned}$$

$$\begin{aligned} 2) f(x) &= 5 \\ 0 \end{aligned}$$

$$\begin{aligned} 3) f(x) &= -2x \\ -2(x^0) \\ -2 \end{aligned}$$

$$\begin{aligned} 4) f(x) &= -2x + 2 \\ -2 \end{aligned}$$

$$\begin{aligned} 5) f(x) &= -2x^2 - 3 \\ -2(2x^{2-1}) - 3 \\ -4x - 3 \end{aligned}$$

$$\begin{aligned} 6) f(x) &= 4x^3 + 6x \\ 12x^2 + 6 \end{aligned}$$

$$\begin{aligned} 7) f(x) &= 8x^6 \\ 48x^5 \end{aligned}$$

$$\begin{aligned} 8) f(x) &= 7 \\ 0 \end{aligned}$$

$$\begin{aligned} 9) f(x) &= (3x^3 + 2x) + (6x^4 + 6) \\ (9x^2 + 2) + (24x^3) \\ 24x^3 + 9x^2 + 2 \end{aligned}$$

$$\begin{aligned} 10) f(x) &= (8x + 2) - (3x^2 - x) \\ (8) - (6x + 1) \\ 8 - 6x - 1 \\ 7 - 6x \end{aligned}$$

⑤ Derivada de 1 producto

$$f(x) = (f \cdot g)$$

$$f'(x) = (f'g) + (fg')$$

Ejemplo

$$f(x) = (4x + 1) + (10x^2 - 5)$$

$$20x(4x + 1) + 4(10x^2 - 5)$$

$$80x^2 + 20x + 40x^2 - 20$$

$$120x^2 + 20x - 20$$

Derivada de la 1ª función por la 2ª función + derivada de la 2ª función por la 1ª función