



PASIÓN POR EDUCAR



**Universidad del sureste  
Campus Comitán  
Licenciatura en Medicina Humana**

**Tema: Actividades de derivadas**

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**Grupo: "B"**

**Grado: segundo semestre**

**Materia: Bioquímica**

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Principia filina biogéneticos

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ajustados

$$1^{\circ} x^7 = 4 \times 6$$

$$2^{\circ} x^{10} = 10 \times 9$$

$$3^{\circ} x^{20} = 20 \times 9$$

$$4^{\circ} x^2 = 2x$$

$$5^{\circ} x^4 = 4x^3$$

ajustados

$$1^{\circ} 7x^6 = 42x^5$$

$$2^{\circ} 8x^2 = 16x$$

$$3^{\circ} 6x = 6$$

$$4^{\circ} 2x^3 = 6x^2$$

$$5^{\circ} 9x^4 = 36x^3$$

Ejercicios

$$1^{\circ} 4x^3 + 6x^2 = 12x^2 + 12x$$

$$2^{\circ} x^7 + x^3 = 4x^3 + 3x^2$$

$$3^{\circ} 2x^2 - 8x = 4x - 8$$

$$4^{\circ} 7x^3 - 5x^5 = 21x^2 - 25x^4$$

$$5^{\circ} 10x^2 + 2x = 20x + 2$$

Biometrika

Tarca

18/03/2022

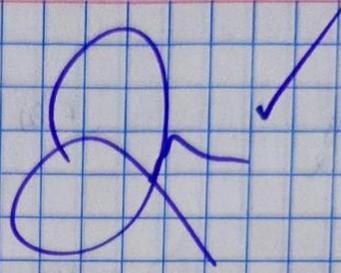
$$1^{\circ} f(x) = 3x^2 = 6x$$

$$2^{\circ} f(x) = 5 = 0$$

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

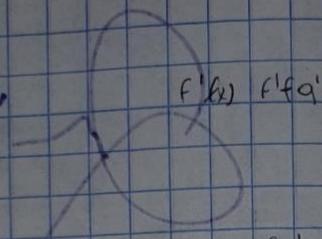
$$4^{\circ} f(x) = -2x + 2 = 2 + 2$$

$$5^{\circ} f(x) = 2x^2 - 5 = 4x - 5$$



Ejemplos

$$4) F(x) = f+g \\ 4x^2+x$$



$$5) F(x) = (f+g)' \\ (4x^2+x) + (5x^2-x)$$

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

$$[10x - 1(4x^2+x)] + [8x + 1(5x^2-x)]$$

Actividad

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

$$2) (3x^3+2x) + (6x^4+6) \\ 24x^3(3x^3+2x) + 9x^2+2(6x^4+6)$$

$$3) (2x^4+x^3) + (5x^3-8x^2) \\ (15x^4-16x - (2x^4+x^3)) + 8x^3 + 3(5x^3-8x^2)$$

$$4) (32x-2) + (6x-1) \\ 6(32x-2) - 32(6x-1)$$

$$5) (7x^2+7) + (2x-3) \\ 2(7x^2+7) + 14x(2x-3)$$

$$6) f(x) = \left[ \frac{f(x)}{g(x)} \right]$$

$$f'(x) = \frac{f'g - fg'}{g^2}$$

$$f(x) = \frac{1x + 5}{10x^2 - 5}$$

$$f'(x) = \frac{1 \cdot (10x^2 - 5) - (1x + 5) \cdot (20x)}{(10x^2 - 5)^2}$$

EXERCÍCIOS

$$1) f(x) = \frac{5x^2 + 4x}{6x^3}$$

$$f'(x) = \frac{10x \cdot 6x^3 - (5x^2 + 4x) \cdot 18x^2}{(6x^3)^2}$$

$$2) f(x) = \frac{3x^5 - 7x^4}{2x} = f(x) = \frac{2 \cdot (3x^5 - 7x^4) - 15x^4 \cdot (2x)}{(2x)^2}$$

$$3) f(x) = \frac{10x^2 + 5x}{15x - 2} = \frac{15(10x^2 + 5x) - 20x(15x - 2)}{(15x - 2)^2}$$

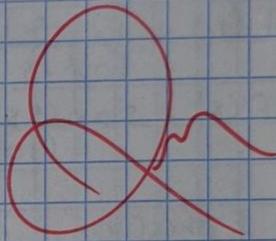
$$4) f(x) = \frac{2 \cdot 10}{2 \cdot 5} = \frac{10x^2 \cdot (2 \cdot 10) - 20x^2}{(2 \cdot 5)^2}$$

Teorema: La derivada de la potencia entera de una función  $f(x)$

sea  $y = [f(x)]^n$  entonces  
 $y' = n [f(x)]^{n-1} (f'(x))$

$f(x) = (2x+3)^3$   
 $y' = (3) (2x+3)^{3-1} (2)$

$y' = (3) (2x+3)^2 (2)$   
 $y' = 6 (2x+3)^2 (2)$   
 $R = y' = 6 (2x+3)$



~~1)  $y' = (6x^3 - 9x^2 + 4)^3 = 3(6x^3 - 9x^2 + 4)^2 (18x^2 + 10)$   
 $(54x^6 - 2)(6x^3 + 5x^2 + 4)^2$~~

~~2)  $y' = (5x^2 + 10x)^2 = 2(5x^2 + 10x)(10x + 10) = 20x + 20(5x^2 + 10x)$~~

~~3)  $y' = (7x^3 - 2x^2 + 5)^4 = 4(7x^3 - 2x^2 + 5)^3 (21x^2 - 2x)$   
 $84x^6 - 8x(7x^3 - 2x^2 + 5)^3$~~

~~4)  $y' = (2x^{10} - 2x^5)^5 = 5(2x^{10} - 2x^5)^4 (20x^9 - 10x^4)$   
 $100x^9 - 50x^4(2x^{10} - 2x^5)^4$~~

~~5)  $y' = (3x^3 - 2x^2)^6 = (6)(3x^3 - 2x^2)^5 (9x^2 - 2x)$   
 $4 = 54x^5 - 12x(3x^3 - 2x^2)^5$~~