Universidad Del Sureste
Campus Comitán de Domínguez
Licenciatura en Medicina Humana

Nombre del alumno:
Andrea Díaz Santiago

Nombre del trabajo:
¡A derivar se ha dicho!

Materia:
Biomatemáticas

Grado:
2º C
Docente:

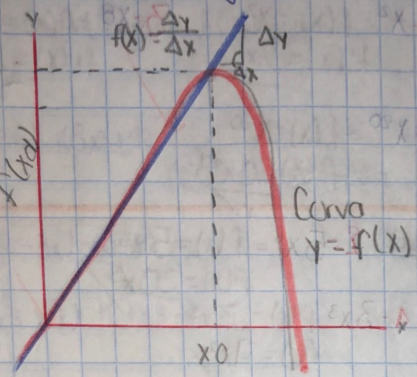
Dra. Rosvani Margine Morales Irecta

Comitán de Domínguez, 19
marzo de 2022

DERIVADAS

15-03-22.

- Derivada de la función en el punto marcado es equivalente a la función pendiente de la recta de la tangente.



- Hb – V. dependiente
- Edad – V. independiente.
- H

REGLAS DE LA DERIVACIÓN.

FÓRMULA:

1. $f(x)=C \longrightarrow f'(x)=0$

2. $f x = x^n$
$f'(x)=n\,x^{n-1}$

3. $f(x)=Cx$
$f'(x)=Cf(x)=Cf'(x)$.

4. $f(x)=f\pm g$
$f'(x)=f'\pm g')=f'\pm g'$

5. $f(x)=fg \pm fg$
$f'(x)=(fg)'=fg'\pm fg'$

6. $f(x)=\left[\frac{f}{g}\right]$ $f'(x)=\frac{f'g-fg'}{g^2}$

$f(x)=x^5$
$f'(x)=5x^4$.

$f(x)=2x^3+x$
$f'(x)=2(3x^2)+1$
$=6x^2+1$.

$f(x)=(4x^3+1)+(10x^2-5)$
$f'(x)=20x(4x+1)+9(10x^2-5)$

Norma

EJERCICIOS.

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

2- $x^2 = f(x) = x^2$
$f'(x) = 2x^1$

3- $x^8 = f(x) = x^8$
$f'(x) = 8x^7$

4- $x'' = f(x) = x''$
$f'(x) = 11x^{10}$

5- $x^{20} = f(x) = x^{20}$
$f'(x) = 20x^{19}$

1- $4x^3 = f(x) = 4x^3 = 4(3x^2)$
$f'(x) = 12x^2$

2- $5x^6 = f(x) = 5x^6$
$f'(x) = 30x^5$

3- $2x$ $f(x) = 2$
$f'(x) = 2$

4- $3x^3$ $f(x) = 3x^3$
$f(x) = 9x^2$

5- $8x^2 = F(x) = 8x^2 = 8(2x)$
$f'(x) = 16x$

1- $2x^2 + 3x = f(x) = 2x^2 + 3x$
$f(x) = 2(2x) + 3x$
$= 4x + 3$

2- $6x - 2 = f(x) = 6x - 2$
$f(x) = 6(1) - 1$
$6 - 1$

3- $5x^5 + x^2 = f(x) = 5x^5 + x^2$
$f(x) = 5(5) + x^2$
$= 25x^4 + 2x$

4- $7x^2 + x = f(x) = 7x^2 + 1$
$f(x) = 7(2) + 1$
$= 14 + 1$

5- $9x^3 - 4x = f(x) = 9x^3 - 4x$
$f(x) = 9(3) - 4x$
$= 27x^2 - 4$

1. $(4x^3-2)-(6x^2+2)$ $f(x)=(4x^3-2)(6x^2+2)$

$f'(x)=12x(4x^3-2)+12x(6x^2+2)$

2. $(3x^5+5x)+(7x-3)=$ $f(x)=(3x^5+5x)+(7x-3)$

$f'(x)\ 7(3x^5+5x)+15x+5(7x-3)$

3. $(5x^2-6)+(8x^3+4)$. $f(x)=(5x^2+6)(8x^3+4)$

$f'(x)=24x^2(5x^2-6)+10x(8x^3+4$

4. $(2x^5-3x)-6x+1)$. $f(x)=6(2x^5-3x)-10x+3(6x-1)$

5. $(7x^3+7)+(7x^3-7)=f'(x=21x^2(7x^3+7)+21x^2(7x-7)$

Ejercicio 6

1) $\dfrac{6x^3+4}{2x^2+3x}=\dfrac{[4x+3(6x^3+4)]-[18x^2(2x^2+3x)]}{(2x^2+3x)^2}$

2) $\dfrac{5x^5-2x^4}{3x^3-x^2}=\dfrac{[9x^2\ 2x(5x^5-2x^4)]-25x^4-8x^3}{(3x^3-x^2}$

3) $\frac{4x^4+3x^3}{2x^2+x} = \frac{[4x^{+1}(4x^3+3x^3)]-[16x^2+9x^2(2x^2+x)]}{(2x^2+x}$

4) $\frac{8x2-3}{7x} = \frac{[7(8x^2-3)]-[16x(7x)]}{(7x)}$

5) $\frac{x^7}{2x^3} = \frac{[6x^2(x^3)]-[(7x^6(2x^3)]}{(2x^3)}$

EJERCICIOS

18-03-22

1) $f(x)=3x^2 = 3x^2$ $f'(x)=6x$

2) $f(x)=5$. $f(x)=5$ $f'(x)=0$

3) $f(x)=-2x = f(x)=-2$

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

5) $f(x)=2x^4+x^3-x^2-4 = f(x)=2(4x^3)+(3x^2)-(2x)-4$
$f(x)=8x^3+3x^2-2x$

6) $f(x)=4x^3+6x = f'(x)=4(4x^2+6)$
$f(x)=12x+6.$

7) $f(x)=8x6 = f(x)=8(6x^5)=48x5.$

8) $f(x)=8 = f(x)=0$

9) $f(x)=(3x^3+2x)+(6x^4+6)$. $f(x)=24x^3(3x^3+2x)+9x^2(6x^4+6)$

10) $f(x)=\frac{8\cdot x6-6x^3-4}{2x^4} = f(x)=\frac{[8x^3(8x6-6x^3-4)]-18x^2(2x4)}{(2x4)2}$

11) $f(x)=(7x^2+4x)+(6x^3-2x^2) = f(x)=18x^2-4x(7x^2+4x)$
$+14x+4(6x^3-2x^2)$

12) $= f(x) = (3x^5+6) + (8x^2-2x) =$

$f(x) = 16x - 2(3x^5+6) - 15x^4(8x^2-2x)$.

13) $\left[\frac{2x^3-x^2}{6x^2+x+2}\right]' = \frac{p'(x)\ 12x+1\ (2x^3-x^2)\ 6x^2-2x\ (6x^2+x+2)}{(6x^2+x+2)^2}$

14) $(6x^4+2x^5) - (2x^6+x^5)$

$f'(x) = 12x^5 + 5x^4(6x^4+2x^5) - 24x^5 + 10x^4(2x^6+x^5)$.

15) $f(x) = 78 = f'(x) = 0$

Reglas:

1. $3 \cdot f(x) = Cx$
2. $1\ f(x) = C$

   $f(x) = 0$
3. $3 \cdot f(x) = Cx$
4. $3 f(x) = Cx$
5. $4 f(x = f \pm g$

   $f'(x = f \pm g)' = f' \pm g'$
6. $3 \cdot f(x) = Cx$
7. $1 f(x) = C = 0$
8. $5 \cdot f(x) = fg + fg$.
9. $6 \cdot f(x) \left[\frac{f}{g}\right]$
10. $5 \cdot f(x) = fg + fg$

    $p'(x) = (fg) + fg \pm fg'$.
11. $5 \cdot f(x) = fg + fg$

    $p'(x) = (fg) + fg \pm fg'$.
12. $6\ f(x) = \left[\frac{f}{g}\right]$
13. $5\ f(x) = fg + fg$.
14. $1\ f(x) = C = 0$.

~~15. $1\ f(x) = C = 0$~~