

3.1. Tabla de derivadas

Función	Derivada	Ejemplos	
<i>Polinómicas</i>			
1. $y = k$	$y' = 0$	$y = 7$	$y' = 0$
2. $y = x$	$y' = 1$	$y = x$	$y' = 1$
3. $y = x^n$	$y' = nx^{n-1}$	$y = x^5$	$y' = 5x^4$
4. $y = u^n$	$y' = nu'u^{n-1}$	$y = (7x - 4)^6$	$y' = 42(7x - 4)^5$
<i>Racionales</i>			
5. $y = \frac{1}{u^n}$	$y' = -\frac{nu'}{u^{n+1}}$	$y = \frac{1}{(2x + 3)^5}$	$y' = -\frac{10}{(2x + 3)^6}$
<i>Irracionales</i>			
6. $y = \sqrt{u}$	$y' = \frac{u'}{2\sqrt{u}}$	$y = \sqrt{7x}$	$y' = \frac{7}{2\sqrt{7x}}$
7. $y = \sqrt[n]{u}$	$y' = \frac{u'}{n\sqrt[n]{u^{n-1}}}$	$y = \sqrt[3]{5x}$	$y' = \frac{5}{3\sqrt[3]{(5x)^2}}$
<i>Exponenciales</i>			
8. $y = e^x$	$y' = e^x$	$y = e^x$	$y' = e^x$
9. $y = e^u$	$y' = u' e^u$	$y = e^{7x-2}$	$y' = 7e^{7x-2}$
10. $y = a^u$	$y' = u' a^u \text{ L. a}$	$y = 3^{2x-7}$	$y' = 2 \cdot 3^{2x-7} \text{ L. 3}$
<i>Logarítmicas</i>			
11. $y = \text{L. } u$	$y' = \frac{u'}{u}$	$y = \text{L. } (3x + 8)$	$y' = \frac{3}{3x + 8}$
12. $y = \log_a u$	$y' = \frac{u'}{u} \log_a e$	$y = \log_2 (7x + 3)$	$y' = \frac{7}{7x + 3} \log_2 e$
<i>Trigonométricas</i>			
13. $y = \text{sen } u$	$y' = u' \cos u$	$y = \text{sen } 5x$	$y' = 5 \cos 5x$
14. $y = \text{cos } u$	$y' = -u' \text{sen } u$	$y = \text{cos } x^4$	$y' = -4x^3 \text{sen } x^4$
15. $y = \text{tg } u$	$y' = u' \text{sec}^2 u$	$y = \text{tg } 7x$	$y' = 7 \text{sec}^2 7x$
<i>Operaciones</i>			
16. $y = ku$	$y' = ku'$	$y = 3 \cos x$	$y' = -3 \text{sen } x$
17. $y = u + v - w$	$y' = u' + v' - w'$	$y = x^4 - 5x^2 + 7$	$y' = 4x^3 - 10x$
18. $y = uv$	$y' = u'v + uv'$	$y = x^5 \text{sen } x$	$y' = 5x^4 \text{sen } x + x^5 \text{cos } x$
19. $y = \frac{u}{v}$	$y' = \frac{u'v - uv'}{v^2}$	$y = \frac{x^2}{\text{sen } x}$	$y' = \frac{2x \text{sen } x - x^2 \text{cos } x}{\text{sen}^2 x}$