

FORMULARIO OFICIAL DE CÁLCULO I SEGUNDO EXAMEN PARCIAL

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|-------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. $\frac{d}{dx}[cu] = cu'$ | 2. $\frac{d}{dx}[u \pm v] = u' \pm v'$ | 3. $\frac{d}{dx}[uv] = uv' + vu'$ |
| 4. $\frac{d}{dx}\left[\frac{u}{v}\right] = \frac{vu' - uv'}{v^2}$ | 5. $\frac{d}{dx}[c] = 0$ | 6. $\frac{d}{dx}[u^n] = nu^{n-1}u'$ |
| 7. $\frac{d}{dx}[x] = 1$ | 8. $\frac{d}{dx}[u] = \frac{u}{ u }(u'), \quad u \neq 0$ | 9. $\frac{d}{dx}[\ln u] = \frac{u'}{u}$ |
| 10. $\frac{d}{dx}[e^u] = e^u u'$ | 11. $\frac{d}{dx}[\log_a u] = \frac{u'}{(\ln a)u}$ | 12. $\frac{d}{dx}[a^u] = (\ln a)a^u u'$ |
| 13. $\frac{d}{dx}[\sin u] = (\cos u)u'$ | 14. $\frac{d}{dx}[\cos u] = -(\sin u)u'$ | 15. $\frac{d}{dx}[\tan u] = (\sec^2 u)u'$ |
| 16. $\frac{d}{dx}[\cot u] = -(\csc^2 u)u'$ | 17. $\frac{d}{dx}[\sec u] = (\sec u \tan u)u'$ | 18. $\frac{d}{dx}[\csc u] = -(\csc u \cot u)u'$ |
| 19. $\frac{d}{dx}[\arcsin u] = \frac{u'}{\sqrt{1-u^2}}$ | 20. $\frac{d}{dx}[\arccos u] = \frac{-u'}{\sqrt{1-u^2}}$ | 21. $\frac{d}{dx}[\arctan u] = \frac{u'}{1+u^2}$ |
| 22. $\frac{d}{dx}[\operatorname{arccot} u] = \frac{-u'}{1+u^2}$ | 23. $\frac{d}{dx}[\operatorname{arcsec} u] = \frac{u'}{ u \sqrt{u^2-1}}$ | 24. $\frac{d}{dx}[\operatorname{arccsc} u] = \frac{-u'}{ u \sqrt{u^2-1}}$ |
| 25. $\frac{d}{dx}[\sinh u] = (\cosh u)u'$ | 26. $\frac{d}{dx}[\cosh u] = (\sinh u)u'$ | 27. $\frac{d}{dx}[\tanh u] = (\operatorname{sech}^2 u)u'$ |
| 28. $\frac{d}{dx}[\coth u] = -(\operatorname{csch}^2 u)u'$ | 29. $\frac{d}{dx}[\operatorname{sech} u] = -(\operatorname{sech} u \tanh u)u'$ | 30. $\frac{d}{dx}[\operatorname{csch} u] = -(\operatorname{csch} u \coth u)u'$ |
| 31. $\frac{d}{dx}[\sinh^{-1} u] = \frac{u'}{\sqrt{u^2+1}}$ | 32. $\frac{d}{dx}[\cosh^{-1} u] = \frac{u'}{\sqrt{u^2-1}}$ | 33. $\frac{d}{dx}[\tanh^{-1} u] = \frac{u'}{1-u^2}$ |
| 34. $\frac{d}{dx}[\coth^{-1} u] = \frac{u'}{1-u^2}$ | 35. $\frac{d}{dx}[\operatorname{sech}^{-1} u] = \frac{-u'}{u\sqrt{1-u^2}}$ | 36. $\frac{d}{dx}[\operatorname{csch}^{-1} u] = \frac{-u'}{ u \sqrt{1+u^2}}$ |

Reglas

1. Constante: $\frac{d}{dx}c = 0$
2. Múltiplo constante: $\frac{d}{dx}cf(x) = cf'(x)$
3. Suma: $\frac{d}{dx}[f(x) \pm g(x)] = f'(x) \pm g'(x)$
4. Producto: $\frac{d}{dx}f(x)g(x) = f(x)g'(x) + g(x)f'(x)$
5. Cociente: $\frac{d}{dx}\frac{f(x)}{g(x)} = \frac{g(x)f'(x) - f(x)g'(x)}{[g(x)]^2}$
6. Cadena: $\frac{d}{dx}f(g(x)) = f'(g(x))g'(x)$
7. Potencia: $\frac{d}{dx}x^n = nx^{n-1}$
8. Potencia: $\frac{d}{dx}[g(x)]^n = n[g(x)]^{n-1}g'(x)$