## FORMULARIO OFICIAL DE CÁLCULO I SEGUNDO EXAMEN PARCIAL

1. 
$$\frac{d}{dx}[cu] = cu'$$

4. 
$$\frac{d}{dx} \left[ \frac{u}{v} \right] = \frac{vu' - uv'}{v^2}$$

7. 
$$\frac{d}{dx}[x] = 1$$

10. 
$$\frac{d}{dx}[e^u] = e^u u'$$

13. 
$$\frac{d}{dx}[\sin u] - (\cos u)u'$$

$$16. \ \frac{d}{dx}[\cot u] = -(\csc^2 u)u$$

$$19. \ \frac{d}{dx} [\arcsin u] = \frac{u'}{\sqrt{1 - u^2}}$$

22. 
$$\frac{d}{dx}[\operatorname{arccot} u] = \frac{-u'}{1+u^2}$$

$$25. \frac{d}{dx} [\sinh u] = (\cosh u)u$$

28. 
$$\frac{d}{dx}[\coth u] = -(\operatorname{csch}^2 u)u$$

31. 
$$\frac{d}{dx}[\sinh^{-1} u] = \frac{u'}{\sqrt{u^2 + 1}}$$

34. 
$$\frac{d}{dx}[\coth^{-1} u] = \frac{u'}{1 - u'}$$

$$2. \frac{d}{dx}[u \pm v] = u' \pm v'$$

5. 
$$\frac{d}{dx}[c] = 0$$

8. 
$$\frac{d}{dx}[|u|] = \frac{u}{|u|}(u'), \quad u \neq 0$$
9. 
$$\frac{d}{dx}[\ln u] = \frac{u'}{u}$$

11. 
$$\frac{d}{dx}[\log_a u] = \frac{u'}{(\ln a)u}$$
 12. 
$$\frac{d}{dx}[a^u] = (\ln a)a^u u'$$

14. 
$$\frac{d}{dx}[\cos u] = (\sin u)u'$$

17. 
$$\frac{d}{dx}[\sec u] = (\sec u \tan u)u^{\alpha}$$

$$20. \ \frac{d}{dx}[\arccos u] = \frac{-u'}{\sqrt{1-u^2}}$$

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.  $\frac{d}{dx}[\operatorname{arccsc} u] = \frac{-u'}{|u|\sqrt{u^2 - 1}}$ 

$$26. \frac{d}{dx} [\cosh u] = (\sinh u)u'$$

29. 
$$\frac{d}{dx}[\operatorname{sech} u] = -(\operatorname{sech} u \tanh u)u$$

32. 
$$\frac{d}{dx}[\cosh^{-1} u] = \frac{u'}{\sqrt{u^2 - 1}}$$

35. 
$$\frac{d}{dx}[\operatorname{sech}^{-1} u] = \frac{-u'}{u\sqrt{1-u}}$$

3. 
$$\frac{d}{dx}[uv] = uv' + vu'$$

6. 
$$\frac{d}{dx}[u^n] = nu^{n-1}u'$$

9. 
$$\frac{d}{dx}[\ln u] = \frac{u'}{u}$$

12. 
$$\frac{d}{dx}[a^u] = (\ln a)a^u u^u$$

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. 
$$\frac{d}{dx}[\csc u] = -(\csc u \cot u)u'$$

$$21. \frac{d}{dx} [\arctan u] = \frac{u'}{1 + u^2}$$

24. 
$$\frac{d}{dx}[\arccos u] = \frac{-u'}{|u|\sqrt{u^2-1}}$$

27. 
$$\frac{d}{dx}[\tanh u] = (\operatorname{sech}^2 u)u'$$

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.  $\frac{d}{dx}[\operatorname{csch} u] = -(\operatorname{csch} u \coth u)u'$ 

33. 
$$\frac{d}{dx}[\tanh^{-1} u] = \frac{u'}{1 - u^2}$$

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: 
$$\frac{d}{dx}[g(x)]^n = n[g(x)]^{n-1}g'(x)$$