UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

COLEGIO DE CIENCIAS Y HUMANIDADES

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CÁLCULO DIFERENCIAL E INTEGRAL II

TABLA DE INTEGRALES

INTEGRALES INMEDIATAS

1. $\int du = u + C$
2. $\int k \cdot du = ku + C$
3. $\int kf(u)du = k\int f(u)du$
4. $\int \left[f(u) + g(u) - h(u) \right] du = \int f(u)du + \int g(u)du - \int h(u)du$
5. $\int u^n du = \frac{u^{n+1}}{n+1} + C$
6. $\int \frac{du}{u} = \int u^{-1} du = \ln|u| + C$

INTEGRALES QUE CONTIENEN FUNCIONES TRIGONOMETRICAS

7. $\int sen\,u\,du = -\cos u + C$
8. $\int \cos u\,du = sen\,u + C$
9. $\int \tan u\,du = \ln|\sec u| + C$
10. $\int \cot u\,du = \ln|sen\,u| + C$
11. $\int \sec u\,du = \ln|\sec u + \tan u| + C$
12. $\int \csc u\,du = \ln|\csc u - \cot u| + C$
13. $\int \sec^2 u\,du = \tan u + C$
14. $\int \csc^2 u\,du = -\cot u + C$
15. $\int \sec u \tan u\,du = \sec u + C$
16. $\int \csc u \cot u\,du = -\csc u + C$

INTEGRALES DE FUNCIONES LOGARITMICAS Y EXPONENCIALES

17. $\int e^u du = e^u + C$
18. $\int a^u du = \frac{a^u}{\ln a} + C$

INTEGRACIÓN POR PARTES

19. $\int u\,dv = uv - \int v\,du$

INTEGRALES DE FUNCIONES TRIGONOMÉTRICAS INVERSAS

20. $\int sen^{-1}u\,du = usen^{-1}u + \sqrt{1-u^2} + C$

21. $\int \cos^{-1}u\,du = u\cos^{-1}u - \sqrt{1-u^2} + C$

22. $\int \tan^{-1}u\,du = u\tan^{-1}u - \ln\sqrt{1+u^2} + C$

23. $\int \cot^{-1}u\,du = u\cot^{-1}u + \ln\left|\sqrt{1+u^2}\right| + C$

24. $\int \sec^{-1}u\,du = u\sec^{-1}u - \ln\left|\sqrt{u^2-1}\right| + C$

25. $\int \csc^{-1}u\,du = u\csc^{-1}u + \ln\left|\sqrt{u^2-1}\right| + C$

INTEGRALES DE FUNCIONES TRIGONOMÉTRICAS HIPERBÓLICAS

26. $\int sen\,\mathrm{h}\,u\,du = \cosh u + C$

27. $\int \cosh u\,du = senhu + C$

28. $\int \tanh u\,du = \ln\left|\cosh u\right| + C$

29. $\int \coth u\,du = \ln\left|senhu\right| + C$

30. $\int \mathrm{sech}u\,du = \tan^{-1}(senhu) + C$

31. $\int \mathrm{csch}u\,du = \ln\left|\tanh\frac{u}{2}\right| + C$

32. $\int \mathrm{sech}^2u\,du = \tanh u + C$

33. $\int \mathrm{csch}^2u\,du = -\coth u + C$

34. $\int \mathrm{sech}u\tanh u\,du = -\mathrm{sech}u + C$

35. $\int \mathrm{csch}u\coth u\,du = -\mathrm{csch}u + C$

INTEGRALES QUE CONTIENEN $a^2 \pm u^2$

36. $\int \frac{du}{a^2+u^2} = \frac{1}{a}\tan^{-1}\frac{u}{a} + C$

37. $\int \frac{du}{a^2-u^2} = \frac{1}{2a}\ln\left|\frac{u+a}{u-a}\right| + C$

38. $\int \frac{du}{u^2-a^2} = \frac{1}{2a}\ln\left|\frac{u-a}{u+a}\right| + C$

INTEGRALES QUE CONTIENEN $\sqrt{u^2-a^2}$

39. $\int \frac{du}{\sqrt{u^2 \pm a^2}} = \ln\left|u + \sqrt{u^2 \pm a^2}\right| + C$

40. $\int \frac{du}{u\sqrt{u^2+a^2}} = -\frac{1}{a}\ln\left|\frac{a+\sqrt{u^2+a^2}}{u}\right| + C$

41. $\int \frac{du}{u\sqrt{u^2-a^2}} = \frac{1}{a}\sec^{-1}\left|\frac{u}{a} + C\right|$

INTEGRALES QUE CONTIENEN $\sqrt{a^2-u^2}$

42. $\int \frac{du}{\sqrt{a^2-u^2}} = sen^{-1}\frac{u}{a} + C$

43. $\int \frac{du}{u\sqrt{a^2-u^2}} = -\frac{1}{a}\ln\left|\frac{a+\sqrt{a^2-u^2}}{u}\right| + C$