MAT 236 - Cálculo II - IMEUSP —- Primeiro semestre de 2022

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Tabela de Primitivas

1. $\displaystyle\int c\ dx = cx + k$
2. $\displaystyle\int x^{\alpha}\ dx = \frac{x^{\alpha+1}}{\alpha+1} + k,\ (\alpha \neq -1)$
3. $\displaystyle\int e^{x}\ dx = e^{x} + k$
4. $\displaystyle\int \frac{1}{x}\ dx = \ln|x| + k,\ x \neq 0$
5. $\displaystyle\int \cos x\ dx = \operatorname{sen} x + k$
6. $\displaystyle\int \operatorname{sen} x\ dx = -\cos x + k$
7. $\displaystyle\int \sec x\ dx = \ln|\sec x + \operatorname{tg} \mathrm{x}| + \mathrm{k}$
8. $\displaystyle\int \sec^2 x\ dx = \operatorname{tg} x + k$
9. $\displaystyle\int \sec^3 x\ dx = \frac{1}{2}[\ \sec\ x \operatorname{tg} \mathrm{x}\ +\ \ln|\sec\ \mathrm{x}\ +\ \operatorname{tg} \mathrm{x}|\ ]\ +\ \mathrm{k}$
10. $\displaystyle\int \sec^{n}\ x\ dx = \frac{1}{n-1}\sec^{n-2} x \operatorname{tg} \mathrm{x} + \frac{\mathrm{n}-2}{\mathrm{n}-1}\int \sec^{\mathrm{n}-2}\ \mathrm{x}\ \mathrm{dx}\ +\ \mathrm{k},\ \text{ se } n \geq 2$
11. $\displaystyle\int \sec x \operatorname{tg} \mathrm{x}\ \mathrm{dx} = \sec \mathrm{x} + \mathrm{k}$
12. $\displaystyle\int \operatorname{tg} x\ dx = -\ln|\cos x| + k$
13. $\displaystyle\int \frac{1}{1+x^2}\ dx = \operatorname{arctg} \mathrm{x} + \mathrm{k}$
14. $\displaystyle\int \frac{dx}{\sqrt{1-x^2}} = \operatorname{arcsen} x + k$

Fórmulas para Primitivas

1. $\displaystyle\int \frac{f'(x)}{f(x)}\,dx = \ln|f(x)| + k$
2. $\displaystyle\int e^{f(x)} f'(x)\,dx = e^{f(x)} + k$
3. $\displaystyle\int f(x)^{\alpha} f'(x)\,dx = \frac{f(x)^{\alpha+1}}{\alpha+1} + k,\ \alpha \neq -1$
4. $\displaystyle\int [\cos f(x)\,]\, f'(x)\,dx = \sin\ f(x) + k$