MAT 211 - Cálculo III - IMEUSP —- 1º semestre de 2012

Prof. Oswaldo Rio Branco de Oliveira

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. $\displaystyle\int [\cos f(x)\,]\, f'(x)\,dx = \sin\ f(x) + k$