

FORMULÁRIO - CÁLCULO II

Derivadas

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| 1) $f(x)=c \Rightarrow f'(x)=0$
2) $f(x)=x \Rightarrow f'(x)=1$
3) $(f+g+h)' = f'+g'+h'$
4) $(f.g)' = fg'+gf'$
$(cf)' = cf'$
5) $\left(\frac{f}{g}\right)' = \left(\frac{f'g - fg'}{g^2}\right)$
$\left(\frac{f}{c}\right)' = \left(\frac{f'}{c}\right)$
$\left(\frac{c}{g}\right)' = \left(-\frac{cg'}{g^2}\right)$ | 6) $(f^n)' = nf^{n-1}.f'$
7) $(\operatorname{sen} f)' = \cos f.f'$
8) $(\cos f)' = -\operatorname{sen} f.f'$
9) $(\tan f)' = \sec^2 f.f'$
10) $(\operatorname{ctgf})' = -\operatorname{csc}^2 f.f'$
11) $(\sec f)' = \sec f.\tan f.f'$
12) $(\operatorname{csc} f)' = -\operatorname{csc} f.\operatorname{ctgf}.f'$
13) $(\operatorname{arcsen} f)' = \frac{f'}{\sqrt{1-f^2}}$ | 14) $(\arccos f)' = -\frac{f'}{\sqrt{1-f^2}}$
15) $(\arctan f)' = \frac{f'}{1+f^2}$
16) $(\operatorname{arc} \cot f)' = -\frac{f'}{1+f^2}$
17) $(\ln f)' = \frac{1}{f}.f'$
18) $e^f = e^f.f'$ |
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Integrais

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| 1) $\int (df + dg - dh) = \int df + \int dg - \int dh$
2) $\int a.df = a \int df$
3) $\int f^n.df = \frac{f^{n+1}}{n+1} + c$
4) $\int \frac{df}{f} = \ln f + c$
5) $\int e^f.df = e^f + c$
6) $\int a^f.df = \frac{a^f}{\ln a} + c$
7) $\int \cos f.df = \operatorname{sen} f + c$
8) $\int \operatorname{sen} f.df = -\cos f + c$
9) $\int \sec^2 f.df = \tan f + c$
10) $\int \operatorname{csc}^2 f.df = -\cot f + c$
11) $\int \sec f.\tan f.df = \sec f + c$
12) $\int \operatorname{csc} f.\cot f.df = -\operatorname{csc} f + c$
13) $\int \tan f.df = \ln(\sec f) + c$
14) $\int \cot f.df = \ln(\operatorname{sen} f) + c$
15) $\int \sec f.df = \ln(\sec f + \tan f) + c$ | 16) $\int \operatorname{csc} f.df = \ln(\operatorname{csc} f - \cot f) + c$
17) $\int \frac{df}{\sqrt{1-f^2}} = \operatorname{arcsen} f + c \text{ ou } -\arccos f + c$
18) $\int \frac{df}{\sqrt{1+f^2}} = \ln(f + \sqrt{f^2+1}) + c$
19) $\int \frac{df}{\sqrt{f^2-1}} = \ln(f + \sqrt{f^2-1}) + c$
20) $\int \frac{df}{1+f^2} = \arctan f + c \text{ ou } -\operatorname{arc} \cot f + c$
21) $\int \frac{df}{1-f^2} = \frac{1}{2} \ln \frac{1+f}{1-f} + c$
22) $\int \frac{df}{f^2-1} = -\int \frac{df}{1-f^2} = -\frac{1}{2} \ln \frac{1+f}{1-f} + c$
23) $\int \operatorname{sen} kf.df = -\frac{\cos kf}{k} + c$
24) $\int \cos kf.df = \frac{\operatorname{sen} kf}{k} + c$
25) $\int e^{kf}.df = \frac{e^{kf}}{k} + c$ |
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Relações Trigonométricas

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| 1) $\operatorname{sen}^2 f + \cos^2 f = 1$
2) $\sec^2 f - \tan^2 f = 1$
3) $\operatorname{csc}^2 f - \cot^2 f = 1$
4) $\operatorname{sen}^2 f = \frac{1}{2} - \frac{1}{2} \cos 2f$
5) $\cos^2 f = \frac{1}{2} + \frac{1}{2} \cos 2f$ | 6) $\operatorname{sen} 2f = 2 \operatorname{sen} f.\cos f = \frac{2 \tan f}{1 + \tan^2 f}$
7) $\tan^2 f = \frac{2 \tan f}{1 - \tan^2 f}$
8) $\cos 2f = \left(\begin{array}{l} \cos^2 f - \operatorname{sen}^2 f \\ 2\cos^2 f - 1 \\ 1 - 2\operatorname{sen}^2 f \end{array} \right) = \frac{1 - \operatorname{tg}^2 f}{1 + \operatorname{tg}^2 f}$ |
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