Universidade do Minho
Escola de Ciências
DMat

Cálculo
LCC
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Formulário 3 - Regras de derivação

Na lista de derivadas que se segue, omitem-se os domínios das funções.

1. $a' = 0 \quad (a \in \mathbb{R})$

2. $(x^a)' = a\,x^{a-1} \quad (a \in \mathbb{R})$

3. $(f \pm g)'(x) = f'(x) \pm g'(x)$

4. $(f\,g)'(x) = f'(x)g(x) + f(x)g'(x)$

5. $\left(\dfrac{f}{g}\right)'(x) = \dfrac{f'(x)g(x) - f(x)g'(x)}{g^2(x)}$

6. $(f \circ g)'(x) = f'(g(x))\,g'(x)$

7. $(f^{-1})'(y) = \dfrac{1}{f'(f^{-1}(y))}$

8. $(e^x)' = e^x$

9. $(\ln x)' = \dfrac{1}{x}$

10. $(a^x)' = a^x \ln a \quad (a \in \mathbb{R}^+ \setminus \{1\})$

11. $(\log_a x)' = \dfrac{1}{x \ln a} \quad (a \in \mathbb{R}^+ \setminus \{1\})$

12. $(\operatorname{sen} x)' = \cos x$

13. $(\cos x)' = -\operatorname{sen} x$

14. $(\operatorname{tg} x)' = \dfrac{1}{\cos^2 x}$

15. $(\operatorname{cotg} x)' = \dfrac{-1}{\operatorname{sen}^2 x}$

16. $(\operatorname{sh} x)' = \operatorname{ch} x$

17. $(\operatorname{ch} x)' = \operatorname{sh} x$

18. $(\operatorname{th} x)' = \dfrac{1}{\operatorname{ch}^2 x}$

19. $(\operatorname{coth} x)' = \dfrac{-1}{\operatorname{sh}^2 x}$

20. $(\operatorname{arcsen} x)' = \dfrac{1}{\sqrt{1-x^2}}$

21. $(\arccos x)' = \dfrac{-1}{\sqrt{1-x^2}}$

22. $(\operatorname{arctg} x)' = \dfrac{1}{1+x^2}$

23. $(\operatorname{arccotg} x)' = \dfrac{-1}{1+x^2}$

24. $(\operatorname{argsh} x)' = \dfrac{1}{\sqrt{1+x^2}}$

25. $(\operatorname{argch} x)' = \dfrac{1}{\sqrt{x^2-1}}$

26. $(\operatorname{argth} x)' = \dfrac{1}{1-x^2}$

27. $(\operatorname{argcoth} x)' = \dfrac{1}{1-x^2}$