ANEXO-I. DERIVADAS PARCIAIS DE FUNÇÕES ELEMENTARES.

As igualdades estão enunciadas apenas para $\frac{\partial}{\partial x}$ e $\frac{\partial u}{\partial x}$, mas obviamente são as mesmas para: $\frac{\partial}{\partial y}$ e $\frac{\partial u}{\partial y}$ e $\frac{\partial}{\partial z}$ e $\frac{\partial u}{\partial z}$;

01 $\frac{\partial[u^n]}{\partial x} = n.u^{n-1}.\frac{\partial u}{\partial x}$;

02 $\frac{\partial(\text{sen}\,u)}{\partial x} = \cos u.\frac{\partial u}{\partial x}$; 03 $\frac{\partial(\cos u)}{\partial x} = -\text{sen}\,u.\frac{\partial u}{\partial x}$; 04 $\frac{\partial(\text{tg}\,u)}{\partial x} = \sec^2 u.\frac{\partial u}{\partial x}$;

05 $\frac{\partial(\text{cotg}\,u)}{\partial x} = -\text{cosec}^2 u.\frac{\partial u}{\partial x}$; 06 $\frac{\partial(\sec u)}{\partial x} = \sec u.\text{tg}\,u.\frac{\partial u}{\partial x}$; 07 $\frac{\partial(\text{cosec}\,u)}{\partial x} = -\text{cosec}\,u.\text{cotg}\,u.\frac{\partial u}{\partial x}$;

08 $\frac{\partial(\text{arcsen}\,u)}{\partial x} = \frac{1}{\sqrt{1-u^2}}.\frac{\partial u}{\partial x}$; $|u|<1$; 09 $\frac{\partial(\text{arccos}\,u)}{\partial x} = \frac{-1}{\sqrt{1-u^2}}.\frac{\partial u}{\partial x}$; $|u|<1$;

10 $\frac{\partial(\text{arctg}\,u)}{\partial x} = \frac{1}{1+u^2}.\frac{\partial u}{\partial x}$; 11 $\frac{\partial(\text{arccotg}\,u)}{\partial x} = \frac{-1}{1+u^2}.\frac{\partial u}{\partial x}$;

12 $\frac{\partial(\text{arcsec}\,u)}{\partial x} = \frac{1}{u\sqrt{u^2-1}}.\frac{\partial u}{\partial x}$; $|u|>1$; 13 $\frac{\partial(\text{arccosec}\,u)}{\partial x} = \frac{-1}{u\sqrt{u^2-1}}.\frac{\partial u}{\partial x}$; $|u|>1$;

14 $\frac{\partial(\ln u)}{\partial x} = \frac{1}{u}.\frac{\partial u}{\partial x}$; $u>0$; 15 $\frac{\partial(e^u)}{\partial x} = e^u.\frac{\partial u}{\partial x}$;

16 $\frac{\partial(\log_a^u)}{\partial x} = \frac{1}{u.\ln a}.\frac{\partial u}{\partial x}$; $u>0, a>0, a\neq 1$; 17 $\frac{\partial(a^u)}{\partial x} = a^u.\ln a.\frac{\partial u}{\partial x}$; $a>0$;

18 $\frac{\partial(\text{senh}\,u)}{\partial x} = \cosh u.\frac{\partial u}{\partial x}$; 19 $\frac{\partial(\cosh u)}{\partial x} = \text{senh}\,u.\frac{\partial u}{\partial x}$; 20 $\frac{\partial(\text{tgh}\,u)}{\partial x} = \text{sech}^2 u.\frac{\partial u}{\partial x}$;

21 $\frac{\partial(\text{cotgh}\,u)}{\partial x} = -\text{cosech}^2 u.\frac{\partial u}{\partial x}$; 22 $\frac{\partial(\text{sech}\,u)}{\partial x} = -\text{sech}\,u.\text{tgh}\,u.\frac{\partial u}{\partial x}$;

23 $\frac{\partial(\text{cosech}\,u)}{\partial x} = -\text{cosech}\,u.\text{cotgh}\,u.\frac{\partial u}{\partial x}$;

24 $\frac{\partial(\text{arcsenh}\,u)}{\partial x} = \frac{1}{\sqrt{u^2+1}}.\frac{\partial u}{\partial x}$; 25 $\frac{\partial(\text{arccosh}\,u)}{\partial x} = \frac{1}{\sqrt{u^2-1}}.\frac{\partial u}{\partial x}$; $u>1$;

26 $\frac{\partial(\text{arctgh}\,u)}{\partial x} = \frac{1}{1-u^2}.\frac{\partial u}{\partial x}$; $|u|<1$; 27 $\frac{\partial(\text{arccotgh}\,u)}{\partial x} = \frac{1}{1-u^2}.\frac{\partial u}{\partial x}$; $|u|>1$;

28 $\frac{\partial(\text{arcsech}\,u)}{\partial x} = \frac{-1}{u\sqrt{1-u^2}}.\frac{\partial u}{\partial x}$; $0<u<1$;

29 $\frac{\partial(\text{arccosech}\,u)}{\partial x} = \frac{-1}{|u|\sqrt{u^2+1}}.\frac{\partial u}{\partial x}$; $u\neq 0$;