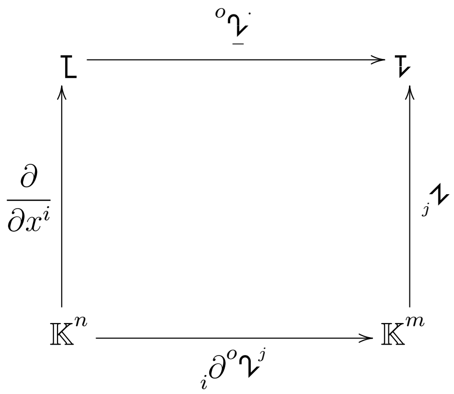
$$\mathsf{L}\,{}^{o}\underline{\daleth} = \sum_i \mathsf{L}^i\,{}^{o}_{i-}\daleth$$



$$\daleth \text{ stet part diff } \Longrightarrow \daleth \text{ diff}$$

$$_{i-}\daleth \text{ o-stet } \Longrightarrow \bigwedge_{\varepsilon}^{>0} \bigvee_{\delta}^{>0} \overline{x-o} \leqslant \delta \curvearrowright \overline{{}^{x}_{i-}\daleth - {}^{o}_{i-}\daleth} \leqslant \frac{\varepsilon}{n}$$

$$^{x^1\cdot\cdot x^n}\daleth - {}^{o^1\cdot\cdot o^n}\daleth = \sum_{1\leqslant i\leqslant n} \underbrace{{}^{x^{<}x^i o^{>}}\daleth - {}^{x^{<}o^i o^{>}}\daleth} \underset{\text{MWS}}{=} \sum_{1\leqslant i\leqslant n} \underbrace{x^i - o^i}\, {}^{x^{<}t^i o^{>}}_{i-}\daleth$$

$$t^i \in o^i | x^i \Longrightarrow \overline{\underbrace{x^{<}t^i o^{>}} - \underbrace{o^1\cdot\cdot o^n}} = \overline{x^{<} - o^{<}{:}t^i - o^i{:}0^{>}} \leqslant \overline{x-o} \leqslant \delta$$

$$\Longrightarrow \overline{{}^{x^1\cdot\cdot x^n}\daleth - {}^{o^1\cdot\cdot o^n}\daleth - \sum_i \underbrace{x^i - o^i}\, {}^{o}_{i-}\daleth} = \sum_i \underbrace{x^i - o^i} \underbrace{{}^{x^{<}t^i o^{>}}_{i-}\daleth - {}^{o}_{i-}\daleth} \leqslant \sum_i \overline{x^i - o^i}\, \overbrace{{}^{x^{<}t^i o^{>}}_{i-}\daleth - {}^{o}_{i-}\daleth}^{\leqslant \varepsilon/n} \leqslant \varepsilon\, \overline{x-o}$$

$$^{x:y}\daleth = \begin{cases} \dfrac{xy}{x^2+y^2} & x{:}y \neq 0{:}0 \\ 0 & x{:}y = 0{:}0 \end{cases} \Longrightarrow \begin{cases} \daleth \text{ part diff} \\ {}^{1/n:1/n}\daleth = \dfrac{1}{2} \end{cases} \Longrightarrow \daleth \text{ nicht stet in } 0{:}0$$

$$\begin{cases} \dfrac{x^\alpha y^\beta}{\overline{x^2+y^2}^{\gamma/2}} & x{:}y \neq 0{:}0 \\ 0 & x{:}y = 0{:}0 \end{cases}$$

$$\alpha + \beta > \gamma \Longrightarrow \text{ stet}$$

$$\overline{x^\alpha y^\beta} = \overline{x}^\alpha \, \overline{y}^\beta \leqslant \overparen{x^2+y^2}^{\alpha/2} \, \overparen{x^2+y^2}^{\beta/2} = \overparen{x^2+y^2}^{(\alpha+\beta)/2} > \overparen{x^2+y^2}^{\gamma/2} \Longrightarrow \frac{x^\alpha y^\beta}{\overparen{x^2+y^2}^{\gamma/2}} \rightsquigarrow 0$$

$$\alpha + \beta = \gamma + 1 \Longrightarrow \text{ not stet}$$

$$^{t:t}\text{ɿ} = t^{\alpha+\beta-\gamma} = 1$$

$$^{t:-t}\text{ɿ} = (-1)^\beta \, t^{\alpha+\beta-\gamma} = (-1)^\beta$$

$$\alpha + \beta > \gamma + 1 \Longrightarrow \text{ stet part diff}$$

$$\partial_x \frac{x^\alpha y^\beta}{\overparen{x^2+y^2}^{\gamma/2}} = \frac{\alpha x^{\alpha-1} y^\beta \overparen{x^2+y^2}^{\gamma/2} - \gamma x^{\alpha+1} y^\beta \overparen{x^2+y^2}^{\gamma/2-1}}{\overparen{x^2+y^2}^{\gamma}} = \alpha \frac{x^{\alpha-1} y^\beta}{\overparen{x^2+y^2}^{\gamma/2}} - \gamma \frac{x^{\alpha+1} y^\beta}{\overparen{x^2+y^2}^{(\gamma+2)/2}} \rightsquigarrow 0$$

$$\text{da } \alpha - 1 + \beta > \gamma \text{ und } \alpha + 1 + \beta > \gamma + 2$$

$$\alpha + \beta = \gamma + 1 \Longrightarrow \text{ not diff}$$

$$^{t:t}\text{ɿ} = t^{\alpha+\beta-\gamma} = t \Longrightarrow \partial_t \, ^{t:t}\text{ɿ} = 1$$

$$^{t:-t}\text{ɿ} = (-1)^\beta \, t^{\alpha+\beta-\gamma} = (-1)^\beta t \Longrightarrow \partial_t \, ^{-t:t}\text{ɿ} = (-1)^\beta$$

$$\begin{cases} \dfrac{xy^2}{x^2+y^2} & x{:}y \neq 0{:}0 \\ 0 & x{:}y = 0{:}0 \end{cases} \underset{\text{FR/46}}{\Longrightarrow} \text{ stet/part diff/nicht tot diff}$$

$$\begin{cases} \sqrt{x^2+y^2} & y > 0 \\ x & y = 0 \\ -\sqrt{x^2+y^2} & y < 0 \end{cases} \text{ stet/part diff/nicht tot diff}$$

$$^{x:y}\text{ɿ} = \overline{x} + y \text{ part diff/tot diff?}$$

compute partials not simplify

$$x^{1/4}\, y^{3/4} - x/y$$

$$\left(1 + {}^{xy}\mathfrak{o}\right)^2$$

$$\frac{y + {}^{x\,+\,y}\mathfrak{c}}{x - {}^{x\,+\,y}\mathfrak{s}}$$