DefBer/part Abl/GradientenFeld grad $\nabla_x \curlywedge / \overline{\nabla_x \curlywedge}$

$$\frac{\sin xy}{x^2+y^2}: \quad \log \frac{\sqrt{(x-1)^2+y^2}}{\sqrt{(x+1)^2+y^2}}$$

$$\frac{1}{xy}: \quad \frac{x}{y}+\frac{y}{x}: \quad xy \neq 0$$

$$^{x:y}\curlywedge = \cos xy : \sin \frac{x}{y} \text{ vectorial}$$

$$e^{x+y-z}: \quad \frac{e^{x+2y} \ln y}{x+z \sin^2}$$

$$\sin \frac{1}{x^2+y^2+z^2}: \quad \frac{xyz}{x^2+y^2+z^2}: \quad \log\left(x^2+y^2+z^2\right)$$

$$\frac{x}{y}+\frac{y}{z}+\frac{z}{x}: \quad xyz \neq 0$$

$$\frac{x_i}{\overline{x_1 : \cdots : x_d}} \text{ on } \mathbb{R}^d \llcorner 0$$

$$^{x_1 \cdot \cdot x_n}\curlywedge = \frac{1}{x_1 \cdot \cdot x_n}$$

Richtungs-Ableitung $v^{x}\underline{\curlywedge}$

$$^{x}\curlywedge = \overline{x}^{-2}: \quad v = v_1 : \cdots v_d \text{ bel}$$

$$^{x:y}\curlywedge = \left(^{xy}\cos : ^{x^2+y^2}\sin\right): \quad v = e_1 - e_2$$

$$^{x:y:z}\curlywedge = \left(\frac{1}{yz} : \frac{1}{zx} : \frac{1}{xy}\right): \quad \text{which } v: \quad v^{\,x:y:z}\underline{\curlywedge} = 0$$

Potential mit Gradientenfeld

$$\nabla_{x:y}\curlywedge = x:y: \quad y:x \text{ on } \mathbb{R}^2$$

$$\nabla_{x:y}\curlywedge = \frac{x:y}{\overline{x:y}}: \quad \frac{x:y}{\overline{x:y}^2}: \quad -\frac{x:y}{\overline{x:y}^3} \text{ Gravitations-Feld/on } \mathbb{R}^2 \llcorner 0$$

$\overline{xy}$ where part diff/tot diff in 0:0

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

$$\mathbb{R}^d \begin{cases} \|v\|^2 \sin \frac{1}{\|v\|} & \\ 0 & v = 0 \end{cases}$$?part diff/tot diff/stet part diff/Ableitungen