

$$\mathfrak{h} \xrightarrow[\text{o diff}]{\mathfrak{v}} \mathfrak{h} \xrightarrow[\text{o}\mathfrak{v} \text{ diff}]{\mathfrak{k}} \mathfrak{h} \Rightarrow \begin{cases} \mathfrak{h} \xrightarrow[\text{o diff}]{\mathfrak{v}\mathfrak{k}} \mathfrak{h} \\ \underline{\text{o}\mathfrak{v}\mathfrak{k}} = \underline{\text{o}\mathfrak{v}} \underline{\text{o}\mathfrak{k}} \end{cases}$$

$$o \neq x_n \rightsquigarrow o \Rightarrow \begin{cases} x_n \mathfrak{v} \rightsquigarrow \text{o}\mathfrak{v} \\ x_n \mathfrak{v} - \text{o}\mathfrak{v} \rightsquigarrow \underline{\text{o}\mathfrak{v}} \\ \frac{x_n \mathfrak{v} - \text{o}\mathfrak{v}}{x_n - o} \rightsquigarrow \underline{\text{o}\mathfrak{v}} \end{cases}$$

$$\text{If } \text{o}\mathfrak{v} \neq x_n \mathfrak{v} \text{ infinite} \Rightarrow \begin{cases} x_n \mathfrak{v} \rightsquigarrow \text{o}\mathfrak{v} \\ x_n \mathfrak{v} - \text{o}\mathfrak{v} \rightsquigarrow \underline{\text{o}\mathfrak{v}} \\ x_n - o \\ \frac{x_n \mathfrak{v} - \text{o}\mathfrak{v}}{x_n - o} \rightsquigarrow \underline{\text{o}\mathfrak{v}} \end{cases}$$

$$\Rightarrow \frac{x_n \overbrace{\mathfrak{v}\mathfrak{k}} - \text{o}\overbrace{\mathfrak{v}\mathfrak{k}}}{x_n - o} = \frac{x_n \mathfrak{v}\mathfrak{k} - \text{o}\mathfrak{v}\mathfrak{k}}{x_n - o} = \frac{x_n \mathfrak{v} - \text{o}\mathfrak{v}}{x_n - o} \frac{x_n \mathfrak{k} - \text{o}\mathfrak{k}}{x_n \mathfrak{v} - \text{o}\mathfrak{v}} \rightsquigarrow \underline{\text{o}\mathfrak{v}} \underline{\text{o}\mathfrak{k}}$$

$$\text{If } x_n \mathfrak{v} = \text{o}\mathfrak{v} \text{ infinite} \Rightarrow 0 = \frac{x_n \mathfrak{v} - \text{o}\mathfrak{v}}{x_n - o} \rightsquigarrow \underline{\text{o}\mathfrak{v}} = 0$$

$$\Rightarrow \frac{x_n \overbrace{\mathfrak{v}\mathfrak{k}} - \text{o}\overbrace{\mathfrak{v}\mathfrak{k}}}{x_n - o} = \frac{x_n \mathfrak{v}\mathfrak{k} - \text{o}\mathfrak{v}\mathfrak{k}}{x_n - o} = 0 \rightsquigarrow 0 = \underline{\text{o}\mathfrak{v}} \underline{\text{o}\mathfrak{k}}$$

$$\mathfrak{v} \text{ diff at } o \Leftrightarrow \bigvee \underline{\text{o}\mathfrak{v}} \in \overset{i}{\mathfrak{L}} \triangleleft \mathfrak{L}$$

$$\bigwedge_{\varepsilon > 0} \bigvee_{\delta > 0} \overset{\mathfrak{L}}{\mathfrak{L}} \leq \delta \rightsquigarrow o + \mathfrak{L} \in \mathfrak{h} \wedge \overline{\overset{\mathfrak{L}}{\mathfrak{L}} \overset{o+\mathfrak{L}}{\mathfrak{v}} - \overset{o}{\mathfrak{v}} - \overset{\mathfrak{L}}{\mathfrak{L}} \overset{o}{\mathfrak{v}}} \leq \varepsilon \overset{\mathfrak{L}}{\mathfrak{L}}$$

$$\frac{\overset{o+\mathfrak{L}}{\mathfrak{v}} - \overset{o}{\mathfrak{v}} - \overset{\mathfrak{L}}{\mathfrak{L}} \overset{o}{\mathfrak{v}}}{\overset{\mathfrak{L}}{\mathfrak{L}}} \rightsquigarrow 0$$

\mathcal{V} diff at $o \Rightarrow \mathcal{V}$ stet at o

$$\overline{|\mathcal{V}(o+\Delta) - \mathcal{V}(o)|} \leq \underbrace{\overline{|\mathcal{V}(o)|}}_{\varepsilon} + \varepsilon |\Delta|$$