$$^{x}\pmb{\eta}_n = \frac{x}{1 + nx^2} \rightsquigarrow 0 \text{ glm on } \mathbb{R}$$

$$^{x}\underline{\pmb{\eta}}_n = \frac{1 - nx^2}{\left(1 + nx^2\right)^2} = 0 \Leftrightarrow x = \frac{\pm 1}{\sqrt{n}}$$

$$x \geqslant 0 \Rightarrow 0 \leqslant {}^{x}\pmb{\eta}_n \leqslant {}^{1/\sqrt{n}}\pmb{\eta}_n = \frac{1}{2\sqrt{n}} \rightsquigarrow 0$$

$$x^n \text{ nicht u-konv on } 0|1$$

$$\sqrt[n]{n} \rightsquigarrow 1$$

$$^{\mathbb{R}}\text{ptw/u-konv}: \quad x + \frac{1}{n}: \quad \left(x + \frac{1}{n}\right)^2: \quad \frac{nx}{1 + n^2x^2}$$

$$^{\mathbb{R}}\text{u-konv}: \quad \frac{\sin nx}{n}$$

$$\mathbb{R}[x] \ni p_n {}^{\mathbb{R}}\text{u-konv} \Rightarrow \bigvee_{m}^{\mathbb{N}} \bigwedge_{n}^{\geqslant m} p_n - {}^{0}p_n = p_m - {}^{0}p_m$$

$$\mathbb{R}[x] \ni p {}^{\mathbb{R}}\text{bes} \Rightarrow p = \text{cst}$$

$$\text{u-stet } \pmb{\eta}_n \underset{\text{glm}}{\rightsquigarrow} \pmb{\eta} \Rightarrow \pmb{\eta} \text{ u-stet}$$

$$\frac{\sin nx}{1 + n\overline{x}} \rightsquigarrow 0 \text{ ptw/glm?}: \quad \frac{1 + nx}{1 + n^2\overline{x}} \rightsquigarrow \text{ which function}$$

$$\text{where } \begin{cases} nx^n \\ \left(nx^n\right)^n \end{cases} \quad \text{ptw konv/Lim}$$

$$\frac{x^n}{n!} \text{ ?ptw/glm konv on } \mathbb{R}$$

$$^x \daleth_n = \frac{\sqrt{1+n^2 x^2}-1}{n} \quad \text{on} \ -1|1 \Longrightarrow \begin{cases} \daleth_n \rightsquigarrow \daleth & \text{glm} \\ \underline{\daleth}_n \rightsquigarrow \mathbf{1} & \text{ptw/not glm} \end{cases} \quad \text{Bestimme} \ \daleth/\mathbf{1}$$