

$$\lim_{x \rightarrow +\infty} \frac{(1+x^2)^{-\frac{1}{1+\lambda^2}}}{\left(\frac{1}{x}\right)^n} = \lim_{x \rightarrow +\infty} \frac{x^n}{(1+x^2)^{\frac{1}{1+\lambda^2}}} = \lim_{x \rightarrow +\infty} \left[\frac{x^n (1+\lambda^2)}{1+x^2} \right]^{\frac{1}{1+\lambda^2}}$$