ES N 139 PAG 371

$$\lim_{x\to\infty}\left(\frac{x-1}{x+3}\right)^{x+2} = e^{-4}$$

$$\begin{array}{r|l} x-1 & x+3 \\ \hline -x-3 & 1 \\ \hline // \; -4 & \end{array}$$

$$\frac{x-1}{x+3} = \frac{(x+3)1}{x+3} - \frac{4}{x+3}$$

$$\lim_{x\to\infty}\left(1-\frac{4}{x+3}\right)^{x}\left(1-\frac{4}{x+3}\right)^{2} = (\cdot)$$

$$\boxed{\lim_{x\to\infty}\left(1+\frac{1}{x}\right)^{x} = e}$$ limite notevole

$$\lim_{x\to\infty}\left(\left(1+\frac{1}{\frac{-x-3}{4}}\right)^{-x}\right)^{-1}\left(1-\frac{1}{x+3}\right)^{2} = 1$$

$$\lim_{x\to\infty}\frac{1}{\left(1+\frac{1}{\frac{-x-3}{4}}\right)^{-x-3+3}}\left(1-\frac{1}{x+3}\right)^{2} =$$

$$\lim_{x\to\infty}\frac{1}{\left(1+\frac{1}{\frac{-x-3}{4}}\right)^{4\left(\frac{-x-3}{4}\right)}\left(1+\frac{1}{-x-3}\right)^{3}}\left(1+\frac{1}{-x-3}\right)^{2}$$

$-x-3 = z \quad x\to\infty \quad x = -3-z \quad -3-z\to\infty$

$$\lim_{z\to\infty}\frac{1}{\left[\left(1+\frac{1}{z}\right)^{z}\right]^{4}}\left(1+\frac{1}{z}\right)^{-1} = \frac{1}{e^{4}}$$