

EJERCICIO M2BE2276 a:

$$a) \lim_{x \rightarrow 4} \left(\frac{x+2}{6} \right)^{\frac{1}{x-4}} = \left(\frac{4+2}{6} \right)^{\frac{1}{4-4}} = \left(\frac{6}{6} \right)^{\frac{1}{0}} = (1^{\infty})$$

Utilizaremos la estrategia del número "e", sabiendo que:

↑
INDETERMINACIÓN

$$\boxed{\lim_{x \rightarrow p} \left(1 + \frac{1}{f(x)} \right)^{f(x)} = e}$$

$$\lim_{x \rightarrow 4} \left(\frac{x+2}{6} \right)^{\frac{1}{x-4}} = \lim_{x \rightarrow 4} \left(1 + \frac{x+2}{6} - 1 \right)^{\frac{1}{x-4}} =$$

$$= \lim_{x \rightarrow 4} \left(1 + \frac{x+2-6}{6} \right)^{\frac{1}{x-4}} = \lim_{x \rightarrow 4} \left(1 + \frac{x-4}{6} \right)^{\frac{1}{x-4}} =$$

$$= \lim_{x \rightarrow 4} \left(1 + \frac{1}{\frac{6}{x-4}} \right)^{\frac{1}{x-4}} = \lim_{x \rightarrow 4} \left(1 + \frac{1}{\frac{6}{x-4}} \right)^{\frac{6}{x-4} \cdot \frac{1}{x-4}} =$$

$$= e^{\lim_{x \rightarrow 4} \frac{x-4}{6} \cdot \frac{1}{x-4}} = e^{\frac{1}{6}} = \sqrt[6]{e}$$