

8.6 $\lim_{h \rightarrow 0} \frac{\cos(h) - 1}{h} = \frac{\cos(0) - 1}{0} = \frac{1 - 1}{0} = \frac{0}{0} : \text{indéterminé}$

$$\begin{aligned} \lim_{h \rightarrow 0} \frac{\cos(h) - 1}{h} &= \lim_{h \rightarrow 0} \frac{\cos(h) - 1}{h} \cdot \frac{\cos(h) + 1}{\cos(h) + 1} = \lim_{h \rightarrow 0} \frac{\cos^2(h) - 1}{h (\cos(h) + 1)} \\ &= \lim_{h \rightarrow 0} \frac{-\sin^2(h)}{h (\cos(h) + 1)} = \lim_{h \rightarrow 0} -\frac{\sin(h)}{h} \cdot \frac{\sin(h)}{\cos(h) + 1} \\ &= -\lim_{h \rightarrow 0} \frac{\sin(h)}{h} \cdot \lim_{h \rightarrow 0} \frac{\sin(h)}{\cos(h) + 1} = -1 \cdot \frac{0}{1 + 1} = 0 \end{aligned}$$