

0.0.1 Estels 2. Problem

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