

$$\begin{aligned}
 & \frac{-18}{(114)} \lim_{x \rightarrow \frac{\pi}{4}} \frac{\sqrt{1+3\sec x} - 2}{\sec x - 1} \cdot \frac{\sqrt{1+3\sec x} + 2}{\sqrt{1+3\sec x} + 2} = \lim_{x \rightarrow \frac{\pi}{4}} \frac{1+3\sec x - 4}{(\sec x - 1)(\sqrt{1+3\sec x} + 2)} \\
 & = \lim_{x \rightarrow \frac{\pi}{4}} \frac{3(\sec x - 1)}{(\sec x - 1)(\sqrt{1+3\sec x} + 2)} = \frac{3}{2+2} = \frac{3}{4}
 \end{aligned}$$