

$$\begin{aligned}
 & \text{(133)} \quad \lim_{h \rightarrow 0} \frac{\frac{1}{\sin(x+h)} - \frac{1}{\sin x}}{h} = \frac{\sin x - \sin(x+h)}{h \sin(x+h) \sin x} = \lim_{h \rightarrow 0} \frac{-2 \sin \frac{h}{2} \cos(x + \frac{h}{2})}{h \sin(x+h) \sin x} \\
 & = \lim_{h \rightarrow 0} - \frac{\sin \frac{h}{2}}{\frac{h}{2}} \cdot \frac{\cos(x + \frac{h}{2})}{\sin(x+h) \sin x} = - \frac{\cos x}{\sin^2 x}
 \end{aligned}$$