

$$\frac{59}{(133)} \quad \lim_{h \rightarrow 0} \frac{g(x+h) - g(x)}{h} = \lim_{h \rightarrow 0} \frac{-2 \sin \frac{h}{2} \sin(x + \frac{h}{2})}{h} = \lim_{h \rightarrow 0} \frac{\sin \frac{h}{2} \sin(x + \frac{h}{2})}{\frac{h}{2}} \stackrel{=1}{=}$$

$$\lim_{h \rightarrow 0} \frac{\sin(x + \frac{h}{2})}{1} = -\sin x$$