

$$\begin{aligned} f(x) = 5\sqrt{x}\sin x &\Rightarrow f'(x) = 5\sqrt{x}\cos x + 5\sin x \left(\frac{1}{2}x^{-1/2}\right) \\ &= 5\sqrt{x}\cos x + \frac{5\sin x}{2\sqrt{x}} \end{aligned}$$