

$$f(x) = \cos x \sqrt{x}$$

$$\begin{aligned} u &= \cos x & v &= \sqrt{x} \\ u' &= -\sin x & v' &= \frac{1}{2\sqrt{x}} \end{aligned}$$

$$\begin{aligned} f'(x) &= -\sin x \cdot \sqrt{x} + \cos x \cdot \frac{1}{2\sqrt{x}} & \frac{1}{2\sqrt{x}} &= \frac{\sqrt{x}}{2x} \\ &= \frac{\sqrt{x}}{2x} (\cos x - 2x \sin x) \end{aligned}$$