

$$\begin{aligned}y &= \sqrt{x}(x - 10) = x^{3/2} - 10x^{1/2} \Rightarrow y' = \frac{3}{2}x^{1/2} - 5x^{-1/2} \\ &= \frac{1}{2}x^{-1/2}(3x - 10) \quad [\text{factor out } \frac{1}{2}x^{-1/2}] \quad \text{or} \quad y' = \frac{3x - 10}{2\sqrt{x}}.\end{aligned}$$