

$$\begin{aligned} 11. \quad h(x) &= \text{LN} \sqrt{1+3 \text{TAN}^2 X} \\ &= \text{LN} (1+3(\text{TAN} X)^2)^{\frac{1}{2}} \\ &= \frac{1}{2} \text{LN} (1+3(\text{TAN} X)^2) \end{aligned}$$

$$\begin{aligned} h'(x) &= \frac{1}{2} \cdot \frac{1}{1+3(\text{TAN} X)^2} \cdot \frac{d}{dx} (1+3(\text{TAN} X)^2) \\ &= \frac{1}{2} \cdot \frac{1}{1+3 \text{TAN}^2 X} \cdot 3 \cdot 2 (\text{TAN} X)^1 \cdot \frac{d}{dx} (\text{TAN} X) \\ &= \frac{1}{2} \cdot \frac{1}{1+3 \text{TAN}^2 X} \cdot 6 \text{TAN} X \text{SEC}^2 X \\ &= \frac{6 \text{TAN} X \text{SEC}^2 X}{2(1+3 \text{TAN}^2 X)} \\ &= \boxed{\frac{3 \text{TAN} X \text{SEC}^2 X}{1+3 \text{TAN}^2 X}} \end{aligned}$$