

$$\begin{aligned}
 \mathbf{8.23} \quad (x)' &= \left( \cot(\operatorname{arccot}(x)) \right)' \\
 1 &= \cot'(\operatorname{arccot}(x)) (\operatorname{arccot}(x))' = -1 - \cot^2(\operatorname{arccot}(x)) (\operatorname{arccot}(x))' \\
 (\operatorname{arccot}(x))' &= \frac{1}{-1 - \cot^2(\operatorname{arccot}(x))} = \frac{1}{-1 - x^2} = -\frac{1}{1 + x^2}
 \end{aligned}$$