8.23 $(x)' = \Big(\cot\big(\mathrm{arccot}(x)\big)\Big)'$

$1 = \cot'\big(\mathrm{arccot}(x)\big)\,\big(\mathrm{arccot}(x)\big)' = -1 - \cot^2\big(\mathrm{arccot}(x)\big)\,\big(\mathrm{arccot}(x)\big)'$

$\big(\mathrm{arccot}(x)\big)' = \dfrac{1}{-1 - \cot^2\big(\mathrm{arccot}(x)\big)} = \dfrac{1}{-1 - x^2} = -\dfrac{1}{1 + x^2}$