QUESTION

Find $\int \dfrac{dx}{\sqrt{x^2 + 2x}}\, dx$.

ANSWER

$$\int \frac{dx}{\sqrt{x^2 + 2x}}\, dx = \int \frac{dx}{\sqrt{(x+1)^2 - 1^2}}\, dx = \cosh^{-1}(x+1) + c$$