$$\int \frac{1 + \sqrt{x+1}}{1 - \sqrt{x+1}} \, dx = \left[\begin{array}{ll} t = \sqrt{x+1} & x = t^2 - 1 \\ dx = 2t \, dt \end{array} \right] =$$

$$= \int \frac{1+t}{1-t} \cdot 2t \, dt = 2 \int \frac{t^2+t}{1-t} \, dt = \text{Poly div.}$$

$$
\begin{array}{r}
-t - 2 \\
\hline
t^2 + t \quad | \, 1 - t \\
-(-t + t^2) \\
\hline
2t \\
-(-2 + 2t) \\
\hline
2
\end{array}
$$

$$2 \int -(t+2) + \frac{2}{1-t} \, dt = 2 \left(-\frac{t^2}{2} - 2t + 2 \ln|1-t| + C \right) =$$

$$2 \cdot C$$
$$\downarrow$$

$$= -t^2 - 4t + 4 \ln|1-t| + D = -(\sqrt{x+1})^2 - 4\sqrt{x+1} + 4\ln|1-\sqrt{x+1}| + D =$$

$$= -x - 1 - 4\sqrt{x+1} + 4\ln|1-\sqrt{x+1}| + D = -x - 4\sqrt{x+1} - 4\ln|\sqrt{x+1} - 1| + B$$

$$\uparrow$$
$$D - 1$$