

$$\begin{aligned}
& -1|1|_{\frac{2}{m}} \mathbb{C} \\
& dx \overbrace{\frac{\alpha}{1-x}} \overbrace{\frac{\beta}{1+x}} \\
& -1|1|_{\frac{2}{m}} \mathbb{C} \leftarrow -1|1|_{\frac{2}{m}} \mathbb{C}
\end{aligned}$$

$$(1-x^2) \mathfrak{I} + \overbrace{\beta - \alpha - \alpha + \beta + 2x} \mathfrak{I} + n(n + \alpha + \beta + 1) \mathfrak{I} = 0 \text{ Jac}$$

$$\begin{aligned}
\begin{matrix} -n|n+\alpha+\beta+1 \\ \boxed{\frac{1-x}{2}} \\ \alpha+1 \end{matrix} &= (-1)^n \begin{matrix} \alpha+1|n+\beta+1 \\ \beta+1|n+\alpha+1 \end{matrix} \begin{matrix} -n|n+\alpha+\beta+1 \\ \boxed{\frac{1+x}{2}} \\ \beta+1 \end{matrix} = \left(\frac{1+x}{2}\right)^n \begin{matrix} -n|-n-\beta \\ \boxed{\frac{x-1}{x+1}} \\ \alpha+1 \end{matrix} = \begin{matrix} \alpha+1|n+\beta+1 \\ \beta+1|n+\alpha+1 \end{matrix} \left(\frac{x-1}{2}\right)^n \begin{matrix} -n|-n-\alpha \\ \boxed{\frac{x+1}{x-1}} \\ \beta+1 \end{matrix} = x P_n^{\alpha|\beta} \\
& \begin{matrix} -n-\alpha-1 \\ \overbrace{\frac{1}{x-1}} \end{matrix} \begin{matrix} -\beta \\ \overbrace{\frac{1}{x+1}} \end{matrix} \begin{matrix} n+1|n+\alpha+1 \\ \boxed{\frac{2}{1-x}} \\ 2n+\alpha+\beta+2 \end{matrix} = x Q_n^{\alpha|\beta}
\end{aligned}$$