

$$\begin{array}{|c|c|c|} \hline
& \frac{2 \cdot (-1)^j}{-1 - x_j} & -\frac{1}{2}(-1)^N \\ \hline
-\frac{2N^2 + 1}{6} & & \frac{(-1)^{i+j}}{x_i - x_j} \\ \hline
-\frac{(-1)^{N+i}}{2(1 + x_i)} & \frac{-x_j}{2(1 - x_j^2)} & -\frac{(-1)^i}{2(1 - x_i)} \\ \hline
\frac{(-1)^{i+j}}{x_i - x_j} & & \\ \hline
\frac{1}{2}(-1)^N & \frac{2 \cdot (-1)^{N+j}}{1 - x_j} & \frac{2N^2 + 1}{6} \\ \hline
\end{array}$$