

Do [As [i, 1, \$n - 1],

$S_{j_}[a[i]] = -U_j[a[i]];$

$S_{j_}[A[i][n_]] = U_j[A[i][-n]];$

$S_{j_}[x[i, i + 1]] = -q^{-2} U_j[x[i, i + 1]] \quad (*?*)$

];

Do [As [i, 1, \$n - 2], As [n, i + 2, \$n],

$S_{j_}[x[i, n]] = m_{j1, j \rightarrow j} [$

$q S_j[x[i, n - 1]] S_{j1}[x[n - 1, n]] - q^{-1} S_j[x[n - 1, n]] S_{j1}[x[i, n - 1]]$

]

]