```mathematica
R_1[1, i_, j_] = 1 / 2 - T_3 g_1ji g_2ji - g_3ii + g_2jj g_3ii + T_1 (T_3 - 1) g_1ji g_3ji +
    T_2 (T_3 - 1) g_2ji g_3ji - T_2 g_2ji g_3jj +
    (g_1jj g_2ii + (T_3 - 1) g_1jj g_2ji - T_1 g_1ii g_2jj - g_1jj g_3ii -
        T_1 (T_3 - 1) g_1jj g_3ji + T_1 g_1ii g_3jj) / (T_1 - 1);
```