

```

TSD[ $\lambda_1$ ] := Lookup[ $\lambda_1, j, \text{UU@a}[1, j, \infty]$ ];
UU[u_] //  $\gamma_{\text{TSD}}$  := CF[u /.  $\lambda_a \Rightarrow \gamma @ \lambda$ ];
TSD /: ( $\gamma_{\text{TSD}}$ ) $^{-1}$  := Module[{S = Keys @@  $\gamma$ , m},
  m = Table[Coefficient[ $\gamma_i$ , a[j,  $\infty$ ]], {i, S}, {j, S}] //
  Inverse;
  TSD@<| Table[S[ $\alpha$ ] →
    CF@UU@Sum[a[m[ $\alpha$ ,  $\beta$ ], S[ $\beta$ ],  $\infty$ ], { $\beta$ , Length@S}],
    { $\alpha$ , Length@S}] |>
];
a[f_, j_, k_] //  $\gamma_{\text{TSD}}$  := Module[{S = Keys @@  $\gamma$ ,  $\gamma_i$ },
  Switch[{MemberQ[S, j], MemberQ[S, k]},
    {False, False}, UU@a[f, j, k],
    {True, False},  $\gamma_j$  /. a[g_, i_,  $\infty$ ]  $\Rightarrow$  a[fg, i, k],
    {False, True}, ( $\gamma_i = \gamma^{-1}$ ;
    CF@Sum[
       $\gamma[\text{bb}[S \cup \{j\}][\gamma_i, \text{UU@a}[f, j, k]]] /. \{$ 
        a[_, i,  $\infty$ ]  $\Rightarrow$  0, a[g_, l_,  $\infty$ ]  $\Rightarrow$  a[g/b_i, l, i]],
      {i, S}]),
    {True, True}, ct[h $\infty$ , t $\infty$ ][ $\gamma @ \text{a}[f, j, \infty]$ ,
     $\gamma @ \text{a}[1, t\infty, k]]$ 
]];

```