

Define [

$R_{i,j} =$

$$\mathbb{E}_{\{\} \rightarrow \{i,j\}} \left[ \hbar a_j b_i, \hbar x_j y_i, e^{\lambda} \left( \sum_{k=2}^{\$k+1} \frac{(1 - e^{\gamma \in \hbar})^k (\hbar y_i x_j)^k}{k (1 - e^{k \gamma \in \hbar})} \right) \right] \$k,$$

$\bar{R}_{i,j} = CF @ \mathbb{E}_{\{\} \rightarrow \{i,j\}} \left[ -\hbar a_j b_i, -\hbar x_j y_i / B_i,$

$1 + If[\$k == 0, 0, (\bar{R}_{i,j}, \$k-1) \$k [3] -$

$( (\bar{R}_{i,j}, 0) \$k R_{1,2} (\bar{R}_{3,4}, \$k-1) \$k ) // (bm_{i,1 \rightarrow i} am_{j,2 \rightarrow j}) //$   
 $(bm_{i,3 \rightarrow i} am_{j,4 \rightarrow j}) ) [3] ] ,$

$P_{i,j} = \mathbb{E}_{\{i,j\} \rightarrow \{\}} \left[ \beta_i \alpha_j / \hbar, \eta_i \xi_j / \hbar,$

$1 + If[\$k == 0, 0, (P_{i,j}, \$k-1) \$k [3] -$

$(R_{1,2} // ( (P_{1,j}, 0) \$k (P_{i,2}, \$k-1) \$k ) ) [3] ] ]$