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SWxy[U_, kk_] :=
  SWxy[U, kk] = Block[{ $U = U, $k = kk, $p = kk },
    Module[{ G, F, fs, f, bs, e, b, es },
      G = Simp[Table[ $\xi^k/k!$ , {k, 0, $k + 1}].
        NestList[Simp[B[xU, #]] &, yU, $k + 1]];
      fs = Flatten@Table[f1,i,j,k[ $\eta$ ], {1, 0, $k}, {i, 0, 1},
        {j, 0, 1}, {k, 0, 1}];
      F = fs.(bs = fs /. fl_,i_,j_,k_[ $\eta$ ]  $\Rightarrow \epsilon^l U @ \{y^i, a^j, x^k\}$ );
      es = Flatten[Table[Coefficient[e, b] == 0,
        {e, {F - 1U /.  $\eta \rightarrow 0$ , F ** G - yU ** F -  $\partial_\eta F$ }},
        {b, bs}]];
      F = F /. DSolve[es, fs,  $\eta$ ][[1]];
      IE[0,
         $\xi x + \eta y + (U /. \{CU \rightarrow -t \eta \xi, QU \rightarrow \eta \xi (1 - T) / \hbar\})$ ,
        F + 0$k /. {e-  $\rightarrow 1$ , U  $\rightarrow$  Times}
      ] /. (v :  $\eta$  |  $\xi$  | t | T | y | a | x)  $\rightarrow v_1$ 
    ]];

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tSWxy,i_,j_ $\rightarrow$ k_ :=
  SWxy[$U, $k] /. { $\xi_1 \rightarrow \xi_i, \eta_1 \rightarrow \eta_j, (v : t | T | y | a | x)_1 \rightarrow v_k$ };

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tSWxa,i_,j_ $\rightarrow$ k_ := IE[ $\alpha_j a_k, e^{-\gamma \alpha_j} \xi_i x_k, 1$ ];

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tSWay,i_,j_ $\rightarrow$ k_ := IE[ $\alpha_i a_k, e^{-\gamma \alpha_i} \eta_j y_k, 1$ ];

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