```mathematica
SetDirectory["C:/drorbn/AcademicPensieve/Projects/Arrow_Diagrams_and_gl(N)"];
<< "Arrow_Diagrams_and_gl(N).m"

diag = Diag[ar[1, 3], ar[4, 2]]

Diag[ar[1, 3], ar[4, 2]]

t1 = List @@ Expand[(Times @@ diag) /. ar[p_, q_] :>
      LTAt[p, q] + 1/2 (EQAt[p, q] - CAt[p] + CAt[q] - CAt[])
  ]
```

$$\left\{ \frac{CAt[]^2}{4}, \frac{1}{4} CAt[] CAt[1], -\frac{1}{4} CAt[] CAt[2], -\frac{1}{4} CAt[1] CAt[2], -\frac{1}{4} CAt[] CAt[3], \right.$$

$$\frac{1}{4} CAt[2] CAt[3], \frac{1}{4} CAt[] CAt[4], \frac{1}{4} CAt[1] CAt[4], -\frac{1}{4} CAt[3] CAt[4],$$

$$-\frac{1}{4} CAt[] EQAt[1, 3], \frac{1}{4} CAt[2] EQAt[1, 3], -\frac{1}{4} CAt[4] EQAt[1, 3], -\frac{1}{4} CAt[] EQAt[4, 2],$$

$$-\frac{1}{4} CAt[1] EQAt[4, 2], \frac{1}{4} CAt[3] EQAt[4, 2], \frac{1}{4} EQAt[1, 3] EQAt[4, 2], -\frac{1}{2} CAt[] LTAt[1, 3],$$

$$\frac{1}{2} CAt[2] LTAt[1, 3], -\frac{1}{2} CAt[4] LTAt[1, 3], \frac{1}{2} EQAt[4, 2] LTAt[1, 3], -\frac{1}{2} CAt[] LTAt[4, 2],$$

$$\left. -\frac{1}{2} CAt[1] LTAt[4, 2], \frac{1}{2} CAt[3] LTAt[4, 2], \frac{1}{2} EQAt[1, 3] LTAt[4, 2], LTAt[1, 3] LTAt[4, 2] \right\}$$

```mathematica
dirs = -1/4 CAt[4] EQAt[1, 3]
```

$$-\frac{1}{4} CAt[4] EQAt[1, 3]$$

```mathematica
coeff = dirs /. (_CAt | _EQAt | _LTAt) -> 1;
k = 0;
w = Table[1, {2 Length[diag]}];
ltpairs = {};
dirs /. {
   LTAt[p_, q_] :> (
     w[[p]] = e[i = ++k, j = ++k];
     w[[q]] = e[j, i];
     AppendTo[ltpairs, {i, j}];
    ),
   EQAt[p_, q_] :> (w[[p]] = w[[q]] = e[i = ++k, i];),
   CAt[p_] :> (
     w[[p]] = e[i = ++k, i];
     coeff *= h[i];
    ),
   CAt[] :> (coeff *= h[++k]^2;)
  };
w = DeleteCases[w, 1];
{coeff, k, ltpairs, w}
```

$$\left\{ -\frac{h[1]}{4}, 2, \{\}, \{e[2, 2], e[2, 2], e[1, 1]\} \right\}$$

```
OrderTypes[k, ltpairs]
```

{{2, 1}, {1, 1}, {1, 2}}

```
ot = {2, 1}
```

{2, 1}

```
coeff /. h[i_] :> h[ot[[i]]]
```

$$-\frac{h[2]}{4}$$

```
W @@ w /. e[i_, j_] :> alpha[ot[[i]], ot[[j]]]
```

W[101, 101, 202]

```
combfact = Binomial[n, Max[ot]]
```

$$\frac{1}{2} (-1 + n) n$$

```
Clear[UGLnBiAlg];
UGLnBiAlg[diag_Diag] := UGLnBiAlg[diag] = Module[
    {allterms, s, LTAt, EQAt, CAt, m1, m2, dirs, coeff, k, ltpairs, w, allots},
    allterms = List @@ Expand[(Times @@ diag) /. ar[p_, q_] :>
        LTAt[p, q] + 1 / 2 (EQAt[p, q] - CAt[p] + CAt[q] - CAt[])
      ];
    s = Sum[
      dirs = allterms[[m1]];
      coeff = dirs /. (_CAt | _EQAt | _LTAt) -> 1;
      k = 0;
      w = Table[1, {2 Length[diag]}];
      ltpairs = {};
      dirs /. {
        LTAt[p_, q_] :> (
          w[[p]] = e[i = ++k, j = ++k];
          w[[q]] = e[j, i];
          AppendTo[ltpairs, {i, j}];
         ),
        EQAt[p_, q_] :> (w[[p]] = w[[q]] = e[i = ++k, i];),
        CAt[p_] :> (
          w[[p]] = e[i = ++k, i];
          coeff *= h[i];
         ),
        CAt[] :> (coeff *= h[++k] ^ 2;)
       };
      w = DeleteCases[w, 1];
      allots = OrderTypes[k, ltpairs];
      Sum[
       ot = allots[[m2]];
       Times[
        (* Binomial[n, Max[ot]], *)
        n ^ Max[ot],
        coeff /. h[i_] :> h[ot[[i]]],
        W @@ w /. e[i_, j_] :> alpha[ot[[i]], ot[[j]]]
        ],
       {m2, Length[allots]}
      ], {m1, Length[allterms]}
     ];
    CanonicalForm[Expand[s]]
   ];
UGLnBiAlg[expr_] := Expand[expr /. diag_Diag :> UGLnBiAlg[diag]];

diag
```

```
Diag[ar[1, 3], ar[4, 2]]
```

UGLnBiAlg[diag]

$\frac{1}{4}$ n h[1]^2 RW[] - $\frac{1}{2}$ n^2 h[1] RW[101] + $\frac{1}{2}$ n^2 h[1]^2 RW[101] + $\frac{1}{2}$ n^2 h[2] RW[101] +

$\frac{1}{2}$ n^2 h[2]^2 RW[101] + $\frac{1}{2}$ n^3 h[2]^2 RW[101] + $\frac{1}{2}$ n^3 h[3]^2 RW[101] + $\frac{1}{2}$ n^2 h[1] RW[202] -

$\frac{1}{2}$ n^2 h[1]^2 RW[202] + $\frac{1}{2}$ n^3 h[1]^2 RW[202] - $\frac{1}{2}$ n^2 h[2] RW[202] - $\frac{1}{2}$ n^2 h[2]^2 RW[202] -

$\frac{1}{2}$ n^3 h[3]^2 RW[202] - $\frac{1}{2}$ n^3 h[1]^2 RW[303] - $\frac{1}{2}$ n^3 h[2]^2 RW[303] - $\frac{1}{2}$ n^2 RW[101, 101] -

$\frac{1}{2}$ n h[1]^2 RW[101, 101] - $\frac{1}{2}$ n^2 h[2]^2 RW[101, 101] + n^2 RW[101, 202] + 2 n^2 RW[102, 201] -

n^3 RW[102, 201] - n^2 h[1]^2 RW[102, 201] - n^2 h[2]^2 RW[102, 201] - n^3 h[3]^2 RW[102, 201] +

2 n^3 RW[103, 301] - n^3 h[2]^2 RW[103, 301] - $\frac{1}{2}$ n^2 RW[202, 202] - $\frac{1}{2}$ n^2 h[1]^2 RW[202, 202] -

n^3 RW[203, 302] - n^3 h[1]^2 RW[203, 302] - $\frac{1}{2}$ n^2 RW[101, 101, 101] + $\frac{1}{2}$ n^2 RW[101, 101, 202] -

$\frac{1}{2}$ n^3 RW[101, 101, 202] + $\frac{1}{2}$ n^3 RW[101, 101, 303] - 2 n^2 RW[101, 102, 201] -

n^3 RW[101, 102, 201] - n^3 RW[101, 103, 301] - $\frac{1}{2}$ n^2 RW[101, 202, 202] - $\frac{1}{2}$ n^3 RW[101, 202, 202] -

2 n^3 RW[101, 203, 302] - n^4 RW[101, 203, 302] - n^4 RW[101, 204, 402] - $\frac{1}{2}$ n^3 RW[101, 303, 303] -

n^4 RW[101, 304, 403] + 2 n^2 RW[102, 201, 202] - n^3 RW[102, 201, 202] + 2 n^3 RW[102, 201, 303] -

n^4 RW[102, 201, 303] + n^4 RW[102, 201, 404] + n^3 RW[102, 203, 301] - n^3 RW[103, 201, 302] -

n^4 RW[103, 202, 301] + n^3 RW[103, 301, 303] + n^4 RW[103, 301, 404] - n^4 RW[104, 202, 401] +

n^4 RW[104, 303, 401] + $\frac{1}{2}$ n^2 RW[202, 202, 202] + $\frac{1}{2}$ n^3 RW[202, 202, 303] + n^3 RW[202, 203, 302] +

$\frac{1}{2}$ n^3 RW[202, 303, 303] + n^4 RW[202, 304, 403] + n^3 RW[203, 302, 303] + n^4 RW[203, 302, 404] +

n^4 RW[204, 303, 402] + $\frac{1}{4}$ n RW[101, 101, 101, 101] + n^2 RW[101, 101, 102, 201] +

$\frac{1}{2}$ n^2 RW[101, 101, 202, 202] + n^3 RW[101, 101, 203, 302] + n^2 RW[102, 102, 201, 201] +

2 n^3 RW[102, 103, 201, 301] + n^2 RW[102, 201, 202, 202] + 2 n^3 RW[102, 201, 203, 302] +

n^3 RW[102, 201, 303, 303] + 2 n^4 RW[102, 201, 304, 403] + n^3 RW[103, 202, 202, 301] +

2 n^3 RW[103, 203, 301, 302] + 2 n^4 RW[103, 204, 301, 402] + 2 n^4 RW[104, 203, 302, 401]

rels = R /@ Diagrams[R6T]

{Diag[ar[1, 2], ar[3, 4]] + Diag[ar[1, 3], ar[2, 4]] - 2 Diag[ar[1, 4], ar[2, 3]],
 Diag[ar[1, 2], ar[4, 3]] - Diag[ar[1, 3], ar[2, 4]] +
  Diag[ar[1, 4], ar[2, 3]] - Diag[ar[1, 4], ar[3, 2]], -Diag[ar[1, 3], ar[2, 4]] +
  Diag[ar[1, 4], ar[2, 3]] - Diag[ar[1, 4], ar[3, 2]] + Diag[ar[2, 1], ar[3, 4]],
 -Diag[ar[2, 1], ar[3, 4]] + Diag[ar[2, 3], ar[4, 1]] + Diag[ar[3, 1], ar[4, 2]] -
  Diag[ar[3, 2], ar[4, 1]], -Diag[ar[1, 2], ar[4, 3]] +
  Diag[ar[2, 3], ar[4, 1]] + Diag[ar[3, 1], ar[4, 2]] - Diag[ar[3, 2], ar[4, 1]],
 -Diag[ar[2, 1], ar[4, 3]] - Diag[ar[3, 1], ar[4, 2]] + 2 Diag[ar[3, 2], ar[4, 1]]}

UGLnBiAlg[rels]

{0, 0, 0, 0, 0, 0}

Print[# → Short[UGLnBiAlg[#], 3]] & /@ Diagrams[3 ar]

Diag[ar[1, 2], ar[3, 4], ar[5, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] $+\frac{3}{8}$ n h[1]^2 RW[101, 101] +

$\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + ≪605≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[3, 4], ar[6, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

$\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + ≪1849≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[4, 3], ar[5, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

$\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + ≪1849≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[4, 3], ar[6, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] $-\frac{1}{2}$ n^2 h[2]^2 RW[101] $-$

$\frac{1}{2}$ n^3 h[2]^2 RW[101] $-\frac{1}{2}$ n^3 h[3]^2 RW[101] + ≪2325≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[3, 5], ar[4, 6]] →

$-\frac{1}{8}$ n h[1]^2 RW[] $+\frac{3}{8}$ n h[1]^2 RW[101, 101] + ≪601≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[3, 5], ar[6, 4]] →

$-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] + ≪2091≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[4, 6], ar[5, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-$

$\frac{1}{4}$ n^2 h[1]^3 RW[101] + ≪2092≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[5, 3], ar[6, 4]] → $\ll 2388 \gg$ + 6 n^6 RW[$\ll 1 \gg$] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[3, 6], ar[4, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] +

   $\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + $\ll 604 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[3, 6], ar[5, 4]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + $\ll 1849 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[4, 5], ar[6, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{1}{4}$ n^2 h[1]^2 RW[101] + $\frac{1}{2}$ n^3 h[1]^2 RW[101] +

   $\frac{1}{4}$ n^2 h[2]^2 RW[101] + $\frac{3}{4}$ n^3 h[2]^2 RW[101] + $\ll 1919 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 2], ar[5, 4], ar[6, 3]] → $\ll 2401 \gg$ + 6 n^6 RW[$\ll 1 \gg$] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 1], ar[3, 4], ar[5, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + $\ll 1849 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 1], ar[3, 4], ar[6, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] $-\frac{1}{2}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{2}$ n^3 h[2]^2 RW[101] $-\frac{1}{2}$ n^3 h[3]^2 RW[101] + $\ll 2325 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 1], ar[4, 3], ar[5, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] $-\frac{1}{2}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{2}$ n^3 h[2]^2 RW[101] $-\frac{1}{2}$ n^3 h[3]^2 RW[101] + $\ll 2325 \gg$ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

$\text{Diag}[ar[2, 1], ar[4, 3], ar[6, 5]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{3}{4} n^2\, h[1]^2\, RW[101] - \frac{3}{4} n^2\, h[2]^2\, RW[101] - \frac{3}{4} n^3\, h[2]^2\, RW[101] - \frac{3}{4} n^3\, h[3]^2\, RW[101] + \ll2450\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[3, 5], ar[4, 6]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1832\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[3, 5], ar[6, 4]] \rightarrow$
$-\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] + \ll2625\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[4, 6], ar[5, 3]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[1]^3\, RW[101] + \ll2626\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[5, 3], ar[6, 4]] \rightarrow$
$\ll2523\gg + 6 \ll1\gg RW[\ll1\gg] + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[3, 6], ar[4, 5]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1815\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[3, 6], ar[5, 4]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] - \frac{1}{2} n^2\, h[2]^2\, RW[101] - \frac{1}{2} n^3\, h[2]^2\, RW[101] - \frac{1}{2} n^3\, h[3]^2\, RW[101] + \ll2328\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[ar[2, 1], ar[4, 5], ar[6, 3]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] + \frac{1}{2} n^3\, h[1]^2\, RW[101] + \frac{1}{2} n^3\, h[2]^2\, RW[101] + \frac{1}{2} n^4\, h[2]^2\, RW[101] + \frac{1}{2} n^3\, h[3]^2\, RW[101] + \ll2433\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] + 6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] + 6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

```
Diag[ar[2, 1], ar[5, 4], ar[6, 3]] → ≪2536≫ + ≪1≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag}[ar[1, 3], ar[2, 4], ar[5, 6]] \rightarrow$$
$$-\frac{1}{8}\,n\,h[1]^2\,RW[] + \frac{3}{8}\,n\,h[1]^2\,RW[101, 101] + \ll601\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[2, 4], ar[6, 5]] \rightarrow -\frac{1}{8}\,n\,h[1]^2\,RW[] - \frac{1}{4}\,n^2\,h[1]^2\,RW[101] - \frac{1}{4}\,n^2\,h[2]^2\,RW[101] -$$
$$\frac{1}{4}\,n^3\,h[2]^2\,RW[101] - \frac{1}{4}\,n^3\,h[3]^2\,RW[101] + \ll1832\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[4, 2], ar[5, 6]] \rightarrow$$
$$-\frac{1}{8}\,n\,h[1]^2\,RW[] - \frac{1}{4}\,n^2\,h[1]^2\,RW[101] + \ll2091\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[4, 2], ar[6, 5]] \rightarrow$$
$$-\frac{1}{8}\,n\,h[1]^2\,RW[] - \frac{1}{2}\,n^2\,h[1]^2\,RW[101] + \ll2625\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[2, 5], ar[4, 6]] \rightarrow -\frac{1}{8}\,n\,h[1]^2\,RW[] + \frac{3}{8}\,n\,h[1]^2\,RW[101, 101] + \frac{3}{8}\,n^2\,h[2]^2\,RW[101, 101] +$$
$$2\,n^2\,RW[102, 201] - \frac{1}{2}\,n^2\,h[1]^2\,RW[102, 201] + \ll621\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[2, 5], ar[6, 4]] \rightarrow$$
$$-\frac{1}{8}\,n\,h[1]^2\,RW[] - \frac{1}{4}\,n^2\,h[1]^2\,RW[101] + \ll2099\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

$$\text{Diag}[ar[1, 3], ar[4, 6], ar[5, 2]] \rightarrow -\frac{1}{8}\,n\,h[1]^2\,RW[] - \frac{1}{2}\,n^2\,h[1]\,h[2]\,RW[101] - \frac{1}{4}\,n^3\,h[2]^2\,RW[101] -$$
$$\frac{1}{4}\,n^3\,h[3]^2\,RW[101] - \frac{1}{4}\,n^3\,h[1]^2\,RW[202] + \ll1965\gg + 6\,n^5\,RW[105, 205, 304, 403, 501, 502] +$$
$$6\,n^6\,RW[105, 206, 304, 403, 501, 602] + 6\,n^6\,RW[106, 203, 302, 405, 504, 601] +$$
$$6\,n^6\,RW[106, 204, 305, 402, 503, 601] + 6\,n^6\,RW[106, 205, 304, 403, 502, 601]$$

Diag[ar[1, 3], ar[5, 2], ar[6, 4]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] + n^2\, h[1]\, RW[101] + n^3\, h[1]\, RW[101] -$

$\dfrac{7}{4} n^2\, h[1]^2\, RW[101] - n^3\, h[1]^2\, RW[101] + \ll2689\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[1, 3], ar[2, 6], ar[4, 5]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] + \dfrac{3}{8} n\, h[1]^2\, RW[101, 101] +$

$\dfrac{3}{8} n^2\, h[2]^2\, RW[101, 101] + \ll576\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[1, 3], ar[2, 6], ar[5, 4]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] - \dfrac{1}{4} n^2\, h[1]^2\, RW[101] - \dfrac{1}{4} n^2\, h[2]^2\, RW[101] -$

$\dfrac{1}{4} n^3\, h[2]^2\, RW[101] - \dfrac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1836\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[1, 3], ar[4, 5], ar[6, 2]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] - \dfrac{1}{2} n^2\, h[1]\, RW[101] - \dfrac{1}{2} n^3\, h[1]\, RW[101] +$

$\dfrac{1}{4} n^2\, h[1]^2\, RW[101] + \dfrac{1}{2} n^3\, h[1]^2\, RW[101] + \ll2185\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[1, 3], ar[5, 4], ar[6, 2]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] + \dfrac{1}{2} n^2\, h[1]\, RW[101] + \dfrac{1}{2} n^3\, h[1]\, RW[101] -$

$n^2\, h[1]^2\, RW[101] - \dfrac{1}{2} n^3\, h[1]^2\, RW[101] + \ll2665\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[2, 4], ar[3, 1], ar[5, 6]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] - \dfrac{1}{4} n^2\, h[1]^2\, RW[101] -$

$\dfrac{1}{4} n^2\, h[1]^3\, RW[101] + \ll2092\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$
$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[2, 4], ar[3, 1], ar[6, 5]] $\rightarrow -\dfrac{1}{8} n\, h[1]^2\, RW[] - \dfrac{1}{2} n^2\, h[1]^2\, RW[101] -$

$\dfrac{1}{4} n^2\, h[1]^3\, RW[101] + \ll2626\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$
$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

Diag[ar[3, 1], ar[4, 2], ar[5, 6]] $\rightarrow \ll2388\gg + 6\, n^6\, RW[\ll1\gg] + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$
$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$
$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

```
Diag[ar[3, 1], ar[4, 2], ar[6, 5]] →
  ≪2523≫ + 6 ≪1≫ RW[≪1≫] + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag[ar[2, 5], ar[3, 1], ar[4, 6]]} \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] -$$

$$\frac{1}{4} n^2\, h[1]^3\, RW[101] + \ll 2100 \gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

```
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag[ar[2, 5], ar[3, 1], ar[6, 4]]} \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] - \frac{1}{2} n^2\, h[2]^2\, RW[101] -$$

$$\frac{1}{2} n^3\, h[2]^2\, RW[101] - \frac{1}{2} n^3\, h[3]^2\, RW[101] + \ll 2450 \gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

```
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

```
Diag[ar[3, 1], ar[4, 6], ar[5, 2]] → ≪2696≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

```
Diag[ar[3, 1], ar[5, 2], ar[6, 4]] → ≪2576≫ + ≪1≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag[ar[2, 6], ar[3, 1], ar[4, 5]]} \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] -$$

$$\frac{1}{4} n^2\, h[1]^3\, RW[101] + \ll 2059 \gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

```
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag[ar[2, 6], ar[3, 1], ar[5, 4]]} \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] -$$

$$\frac{1}{4} n^2\, h[1]^3\, RW[101] + \ll 2638 \gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

```
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$$\text{Diag[ar[3, 1], ar[4, 5], ar[6, 2]]} \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] + 2\, n^2\, RW[101] + 5\, n^3\, RW[101] +$$

$$3\, n^4\, RW[101] + \frac{1}{2} n^2\, h[1]\, RW[101] + \ll 2477 \gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

```
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

```
Diag[ar[3, 1], ar[5, 4], ar[6, 2]] → ≪2533≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

$\text{Diag}[\text{ar}[1, 4], \text{ar}[2, 3], \text{ar}[5, 6]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] + \frac{3}{8} n\, h[1]^2\, RW[101, 101] +$

$\frac{3}{8} n^2\, h[2]^2\, RW[101, 101] + \ll604\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[2, 3], \text{ar}[6, 5]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[2]^2\, RW[101] -$

$\frac{1}{4} n^3\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1815\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[3, 2], \text{ar}[5, 6]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[2]^2\, RW[101] -$

$\frac{1}{4} n^3\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1849\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[3, 2], \text{ar}[6, 5]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] - \frac{1}{2} n^2\, h[2]^2\, RW[101] -$

$\frac{1}{2} n^3\, h[2]^2\, RW[101] - \frac{1}{2} n^3\, h[3]^2\, RW[101] + \ll2328\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[2, 5], \text{ar}[3, 6]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] + \frac{3}{8} n\, h[1]^2\, RW[101, 101] + \frac{3}{8} n^2\, h[2]^2\, RW[101, 101] +$

$n^2\, h[1]^2\, RW[102, 201] - \frac{1}{2} n^2\, h[1]\, h[2]\, RW[102, 201] + \ll626\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[2, 5], \text{ar}[6, 3]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]^2\, RW[101] +$

$\frac{1}{2} n^2\, h[1]^3\, RW[101] + \ll2129\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[1, 4], \text{ar}[3, 6], \text{ar}[5, 2]] \rightarrow -\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]\, h[2]\, RW[101] - \frac{1}{4} n^3\, h[2]^2\, RW[101] -$

$\frac{1}{4} n^3\, h[3]^2\, RW[101] - \frac{1}{4} n^3\, h[1]^2\, RW[202] + \ll1961\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$

```
Diag[ar[1, 4], ar[5, 2], ar[6, 3]] → - 1/8 n h[1]² RW[] + 2 n² h[1] RW[101] + 2 n³ h[1] RW[101] -

    3/2 n² h[1]² RW[101] - n³ h[1]² RW[101] + ≪2679≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 4], ar[2, 6], ar[3, 5]] → - 1/8 n h[1]² RW[] + 3/8 n h[1]² RW[101, 101] + 3/8 n² h[2]² RW[101, 101] -

    1/2 n² h[1] RW[102, 201] + 1/2 n² h[1]² RW[102, 201] + ≪630≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 4], ar[2, 6], ar[5, 3]] →
    - 1/8 n h[1]² RW[] - 1/4 n² h[1]² RW[101] + ≪2086≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 4], ar[3, 5], ar[6, 2]] → - 1/8 n h[1]² RW[] - 1/2 n² h[1] RW[101] - 1/2 n³ h[1] RW[101] +

    1/4 n² h[1]² RW[101] + 1/2 n³ h[1]² RW[101] + ≪2196≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 4], ar[5, 3], ar[6, 2]] → - 1/8 n h[1]² RW[] + 3/2 n² h[1] RW[101] + 3/2 n³ h[1] RW[101] -

    n² h[1]² RW[101] - 1/2 n³ h[1]² RW[101] + ≪2691≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 3], ar[4, 1], ar[5, 6]] → - 1/8 n h[1]² RW[] + 1/4 n² h[1]² RW[101] + 1/2 n³ h[1]² RW[101] +

    1/4 n² h[2]² RW[101] + 3/4 n³ h[2]² RW[101] + ≪1919≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 3], ar[4, 1], ar[6, 5]] → - 1/8 n h[1]² RW[] + 1/2 n³ h[1]² RW[101] + 1/2 n³ h[2]² RW[101] +

    1/2 n⁴ h[2]² RW[101] + 1/2 n³ h[3]² RW[101] + ≪2433≫ + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +

    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 2], ar[4, 1], ar[5, 6]] → ≪2401≫ + 6 n⁶ RW[≪1≫] + 6 n⁵ RW[105, 205, 304, 403, 501, 502] +
    6 n⁶ RW[105, 206, 304, 403, 501, 602] + 6 n⁶ RW[106, 203, 302, 405, 504, 601] +
    6 n⁶ RW[106, 204, 305, 402, 503, 601] + 6 n⁶ RW[106, 205, 304, 403, 502, 601]
```

Diag[ar[3, 2], ar[4, 1], ar[6, 5]] → ≪2536≫ + ≪1≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 5], ar[3, 6], ar[4, 1]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] −

   $\frac{1}{2}$ n^2 h[1]^3 RW[101] + $\frac{1}{2}$ n^2 h[1] h[2] RW[101] + ≪2130≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 5], ar[4, 1], ar[6, 3]] →

   $-\frac{1}{8}$ n h[1]^2 RW[] + 2 n^2 RW[101] + ≪2472≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 6], ar[4, 1], ar[5, 2]] →

   $-\frac{1}{8}$ n h[1]^2 RW[] $-$ 2 n^2 h[1] RW[101] $-$ 2 n^3 h[1] RW[101] $-\frac{3}{2}$ n^2 h[1]^2 RW[101] −

   n^3 h[1]^2 RW[101] $-\frac{1}{2}$ n^2 h[1]^3 RW[101] + ≪2673≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[4, 1], ar[5, 2], ar[6, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-$ 10 n^2 RW[101] $-$ 22 n^3 RW[101] $-$ 12 n^4 RW[101] −
   4 n^2 h[1]^2 RW[101] $-$ 3 n^3 h[1]^2 RW[101] + ≪2569≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 6], ar[3, 5], ar[4, 1]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] −

   $\frac{1}{2}$ n^2 h[1]^3 RW[101] + $\frac{1}{2}$ n^2 h[1] h[2] RW[101] + ≪2103≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 6], ar[4, 1], ar[5, 3]] → ≪2708≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 5], ar[4, 1], ar[6, 2]] →

   $-\frac{1}{8}$ n h[1]^2 RW[] + 4 n^2 RW[101] + 7 n^3 RW[101] + ≪2727≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[4, 1], ar[5, 3], ar[6, 2]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-$ 8 n^2 RW[101] $-$ 17 n^3 RW[101] −

   9 n^4 RW[101] + $\frac{1}{2}$ n^2 h[1] RW[101] + ≪2589≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[2, 3], ar[4, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] + $\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] −

$\frac{1}{2}$ n^2 h[1] RW[102, 201] − $\frac{3}{4}$ n^2 h[1]^2 RW[102, 201] + «572» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[2, 3], ar[6, 4]] →

$-\frac{1}{8}$ n h[1]^2 RW[] − $\frac{1}{4}$ n^2 h[1]^2 RW[101] + «2059» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[3, 2], ar[4, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] − $\frac{1}{4}$ n^2 h[1]^2 RW[101] − $\frac{1}{4}$ n^2 h[2]^2 RW[101] −

$\frac{1}{4}$ n^3 h[2]^2 RW[101] − $\frac{1}{4}$ n^3 h[3]^2 RW[101] + «1837» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[3, 2], ar[6, 4]] →

$-\frac{1}{8}$ n h[1]^2 RW[] − $\frac{1}{2}$ n^2 h[1]^2 RW[101] + «2637» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[2, 4], ar[3, 6]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] +

$\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + $\frac{1}{2}$ n^2 h[1] RW[102, 201] + «632» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[2, 4], ar[6, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] − $\frac{1}{2}$ n^2 h[1]^2 RW[101] +

$\frac{1}{2}$ n^2 h[1]^3 RW[101] + «2103» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[3, 6], ar[4, 2]] → $-\frac{1}{8}$ n h[1]^2 RW[] − $\frac{1}{4}$ n^2 h[1]^2 RW[101] −

$\frac{1}{4}$ n^2 h[1]^3 RW[101] + «2087» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 5], ar[4, 2], ar[6, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] + n^2 h[1] RW[101] + n^3 h[1] RW[101] −

$\frac{5}{4}$ n^2 h[1]^2 RW[101] − n^3 h[1]^2 RW[101] + «2701» + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +

6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

```
Diag[ar[1, 5], ar[2, 6], ar[3, 4]] →
```

$$-\frac{1}{8} n\, h[1]^2\, RW[] + \frac{3}{8} n\, h[1]^2\, RW[101, 101] + \ll616\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[1, 5], ar[2, 6], ar[4, 3]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{4} n^2\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[2]^2\, RW[101] -$$

$$\frac{1}{4} n^3\, h[2]^2\, RW[101] - \frac{1}{4} n^3\, h[3]^2\, RW[101] + \ll1829\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[1, 5], ar[3, 4], ar[6, 2]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]\, RW[101] - \frac{1}{2} n^3\, h[1]\, RW[101] +$$

$$\frac{1}{4} n^2\, h[1]^2\, RW[101] + \frac{1}{2} n^3\, h[1]^2\, RW[101] + \ll2171\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[1, 5], ar[4, 3], ar[6, 2]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] + \frac{1}{2} n^2\, h[1]\, RW[101] + \frac{1}{2} n^3\, h[1]\, RW[101] -$$

$$n^2\, h[1]^2\, RW[101] - \frac{1}{2} n^3\, h[1]^2\, RW[101] + \ll2663\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[2, 3], ar[4, 6], ar[5, 1]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] + \frac{1}{2} n^2\, h[1]\, RW[101] +$$

$$\frac{1}{2} n^3\, h[1]\, RW[101] + \frac{1}{4} n^2\, h[1]^2\, RW[101] + \ll2191\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[2, 3], ar[5, 1], ar[6, 4]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] + 2\, n^2\, RW[101] + 5\, n^3\, RW[101] + \ll2480\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

```
Diag[ar[3, 2], ar[4, 6], ar[5, 1]] →
```
$$-\frac{1}{8} n\, h[1]^2\, RW[] - \frac{1}{2} n^2\, h[1]\, RW[101] - \frac{1}{2} n^3\, h[1]\, RW[101] - n^2\, h[1]^2\, RW[101] -$$

$$\frac{1}{2} n^3\, h[1]^2\, RW[101] - \frac{1}{4} n^2\, h[1]^3\, RW[101] + \ll2665\gg + 6\, n^5\, RW[105, 205, 304, 403, 501, 502] +$$

$$6\, n^6\, RW[105, 206, 304, 403, 501, 602] + 6\, n^6\, RW[106, 203, 302, 405, 504, 601] +$$

$$6\, n^6\, RW[106, 204, 305, 402, 503, 601] + 6\, n^6\, RW[106, 205, 304, 403, 502, 601]$$

Diag[ar[3, 2], ar[5, 1], ar[6, 4]] $\to -\frac{1}{8}$ n h[1]^2 RW[] $- 2$ n^2 RW[101] $- 5$ n^3 RW[101] $-$

   3 n^4 RW[101] $+ \frac{1}{2}$ n^2 h[1] RW[101] $+ \ll 2525 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 4], ar[3, 6], ar[5, 1]] $\to -\frac{1}{8}$ n h[1]^2 RW[] $+ \frac{1}{2}$ n^2 h[1] RW[101] $+$

   $\frac{1}{2}$ n^3 h[1] RW[101] $+ \frac{1}{4}$ n^2 h[1]^2 RW[101] $+ \ll 2203 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 4], ar[5, 1], ar[6, 3]] $\to -\frac{1}{8}$ n h[1]^2 RW[] $+ 4$ n^2 RW[101] $+ 7$ n^3 RW[101] $+$

   3 n^4 RW[101] $+ \frac{1}{2}$ n^2 h[1] RW[101] $+ \ll 2722 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 6], ar[4, 2], ar[5, 1]] $\to$
$-\frac{1}{8}$ n h[1]^2 RW[] $- \frac{3}{2}$ n^2 h[1] RW[101] $- \frac{3}{2}$ n^3 h[1] RW[101] $-$ n^2 h[1]^2 RW[101] $-$

   $\frac{1}{2}$ n^3 h[1]^2 RW[101] $- \frac{1}{2}$ n^2 h[1]^3 RW[101] $+ \ll 2685 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[4, 2], ar[5, 1], ar[6, 3]] $\to \ll 2597 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 6], ar[3, 4], ar[5, 1]] $\to -\frac{1}{8}$ n h[1]^2 RW[] $+ \frac{1}{2}$ n^2 h[1] RW[101] $+$

   $\frac{1}{2}$ n^3 h[1] RW[101] $+ \frac{1}{4}$ n^2 h[1]^2 RW[101] $+ \ll 2176 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 6], ar[4, 3], ar[5, 1]] $\to$
$-\frac{1}{8}$ n h[1]^2 RW[] $- \frac{1}{2}$ n^2 h[1] RW[101] $- \frac{1}{2}$ n^3 h[1] RW[101] $-$ n^2 h[1]^2 RW[101] $-$

   $\frac{1}{2}$ n^3 h[1]^2 RW[101] $- \frac{1}{4}$ n^2 h[1]^3 RW[101] $+ \ll 2661 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 4], ar[5, 1], ar[6, 2]] $\to$
$-\frac{1}{8}$ n h[1]^2 RW[] $+ 4$ n^2 RW[101] $+ 10$ n^3 RW[101] $+ \ll 2397 \gg + 6$ n^5 RW[105, 205, 304, 403, 501, 502] $+$
   6 n^6 RW[105, 206, 304, 403, 501, 602] $+ 6$ n^6 RW[106, 203, 302, 405, 504, 601] $+$
   6 n^6 RW[106, 204, 305, 402, 503, 601] $+ 6$ n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[4, 3], ar[5, 1], ar[6, 2]] → ≪2562≫ + 6 n^6 ≪1≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 3], ar[4, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] +

   $\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + ≪597≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 3], ar[5, 4]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + ≪1818≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[3, 2], ar[4, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + ≪1818≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[3, 2], ar[5, 4]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{2}$ n^2 h[1]^2 RW[101] $-\frac{1}{2}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{2}$ n^3 h[2]^2 RW[101] $-\frac{1}{2}$ n^3 h[3]^2 RW[101] + ≪2328≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 4], ar[3, 5]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] +

   $\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + ≪611≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 4], ar[5, 3]] →
   $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] + ≪2062≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[3, 5], ar[4, 2]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-$

   $\frac{1}{4}$ n^2 h[1]^3 RW[101] + ≪2063≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[4, 2], ar[5, 3]] → ≪2404≫ + 6 n^6 RW[≪1≫] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 5], ar[3, 4]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{3}{8}$ n h[1]^2 RW[101, 101] +

   $\frac{3}{8}$ n^2 h[2]^2 RW[101, 101] + ≪561≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +

   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[2, 5], ar[4, 3]] → $-\frac{1}{8}$ n h[1]^2 RW[] $-\frac{1}{4}$ n^2 h[1]^2 RW[101] $-\frac{1}{4}$ n^2 h[2]^2 RW[101] $-$

   $\frac{1}{4}$ n^3 h[2]^2 RW[101] $-\frac{1}{4}$ n^3 h[3]^2 RW[101] + ≪1818≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[3, 4], ar[5, 2]] → $-\frac{1}{8}$ n h[1]^2 RW[] + $\frac{1}{4}$ n^2 h[1]^2 RW[101] + $\frac{1}{2}$ n^3 h[1]^2 RW[101] +

   $\frac{1}{4}$ n^2 h[2]^2 RW[101] + $\frac{3}{4}$ n^3 h[2]^2 RW[101] + ≪1914≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[1, 6], ar[4, 3], ar[5, 2]] → ≪2410≫ + 6 n^6 RW[≪1≫] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 3], ar[4, 5], ar[6, 1]] →
   $-\frac{1}{8}$ n h[1]^2 RW[] $- n^2$ RW[101] $- 3 n^3$ RW[101] $- 2 n^4$ RW[101] + $\frac{3}{4}$ n^2 h[1]^2 RW[101] + n^3 h[1]^2 RW[101] +
   ≪1923≫ + 6 n^6 RW[105, 204, 306, 402, 501, 603] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[2, 3], ar[5, 4], ar[6, 1]] →
   $-\frac{1}{8}$ n h[1]^2 RW[] + n^2 RW[101] + 3 n^3 RW[101] + ≪2383≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 2], ar[4, 5], ar[6, 1]] →
   $-\frac{1}{8}$ n h[1]^2 RW[] + n^2 RW[101] + 3 n^3 RW[101] + ≪2383≫ + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

Diag[ar[3, 2], ar[5, 4], ar[6, 1]] →
   ≪2529≫ + 6 n^6 RW[105, 204, 306, 402, 501, 603] + 6 n^5 RW[105, 205, 304, 403, 501, 502] +
   6 n^6 RW[105, 206, 304, 403, 501, 602] + 6 n^6 RW[106, 203, 302, 405, 504, 601] +
   6 n^6 RW[106, 204, 305, 402, 503, 601] + 6 n^6 RW[106, 205, 304, 403, 502, 601]

$\text{Diag}[\text{ar}[2, 4], \text{ar}[3, 5], \text{ar}[6, 1]] \to -\frac{1}{8} n\, h[1]^2\, \text{RW}[] - n^2\, \text{RW}[101] - n^3\, \text{RW}[101] + \frac{3}{4} n^2\, h[1]^2\, \text{RW}[101] +$

$n^3\, h[1]^2\, \text{RW}[101] + \frac{3}{4} n^2\, h[2]^2\, \text{RW}[101] + \ll 1936 \gg + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[2, 4], \text{ar}[5, 3], \text{ar}[6, 1]] \to$

$-\frac{1}{8} n\, h[1]^2\, \text{RW}[] + 3\, n^2\, \text{RW}[101] + 6\, n^3\, \text{RW}[101] + 3\, n^4\, \text{RW}[101] + n^2\, h[1]\, \text{RW}[101] + \ll 2715 \gg +$

$6\, n^6\, \text{RW}[105, 204, 306, 402, 501, 603] + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[3, 5], \text{ar}[4, 2], \text{ar}[6, 1]] \to -\frac{1}{8} n\, h[1]^2\, \text{RW}[] + 3\, n^2\, \text{RW}[101] + 6\, n^3\, \text{RW}[101] +$

$\ll 2717 \gg + 6\, n^6\, \text{RW}[105, 204, 306, 402, 501, 603] + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[4, 2], \text{ar}[5, 3], \text{ar}[6, 1]] \to \ll 2561 \gg + 6\, n^6 \ll 1 \gg + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[2, 5], \text{ar}[3, 4], \text{ar}[6, 1]] \to$

$-\frac{1}{8} n\, h[1]^2\, \text{RW}[] - n^2\, \text{RW}[101] - 2\, n^3\, \text{RW}[101] - n^4\, \text{RW}[101] + \frac{3}{4} n^2\, h[1]^2\, \text{RW}[101] + n^3\, h[1]^2\, \text{RW}[101] +$

$\ll 1937 \gg + 6\, n^6\, \text{RW}[105, 204, 306, 402, 501, 603] + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[2, 5], \text{ar}[4, 3], \text{ar}[6, 1]] \to$

$-\frac{1}{8} n\, h[1]^2\, \text{RW}[] + n^2\, \text{RW}[101] + 2\, n^3\, \text{RW}[101] + \ll 2398 \gg + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[3, 4], \text{ar}[5, 2], \text{ar}[6, 1]] \to -\frac{1}{8} n\, h[1]^2\, \text{RW}[] + 3\, n^2\, \text{RW}[101] + 7\, n^3\, \text{RW}[101] + 4\, n^4\, \text{RW}[101] +$

$\frac{1}{2} n^3\, h[1]^2\, \text{RW}[101] + \frac{1}{2} n^3\, h[2]^2\, \text{RW}[101] + \ll 2449 \gg + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

$\text{Diag}[\text{ar}[4, 3], \text{ar}[5, 2], \text{ar}[6, 1]] \to \ll 2508 \gg + \ll 1 \gg + 6\, n^5\, \text{RW}[105, 205, 304, 403, 501, 502] +$

$6\, n^6\, \text{RW}[105, 206, 304, 403, 501, 602] + 6\, n^6\, \text{RW}[106, 203, 302, 405, 504, 601] +$

$6\, n^6\, \text{RW}[106, 204, 305, 402, 503, 601] + 6\, n^6\, \text{RW}[106, 205, 304, 403, 502, 601]$

```
{Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null,
 Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null,
 Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null,
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 Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null,
 Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null, Null}
```

rels3 = R /@ Diagrams[R6T + 1 ar];
Expand[UGLnBiAlg[rels3]]

```
{0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}
```

vs = UGLnBiAlg /@ Diagrams[3 ar]

A very large output was generated. Here is a sample of it:

$$\left\{ -\frac{1}{8}\, n\, h[1]^2\, RW[] + \frac{3}{8}\, n\, h[1]^2\, RW[101,\ 101] + \frac{3}{8}\, n^2\, h[2]^2\, RW[101,\ 101] + 4\, n^2\, RW[102,\ 201] - \right.$$
$$\frac{9}{4}\, n^2\, h[1]^2\, RW[102,\ 201] - \frac{9}{4}\, n^2\, h[2]^2\, RW[102,\ 201] - \frac{9}{4}\, n^3\, h[3]^2\, RW[102,\ 201] + \ll 595 \gg +$$
$$6\, n^5\, RW[105,\ 204,\ 304,\ 402,\ 403,\ 501] + 6\, n^5\, RW[105,\ 204,\ 305,\ 402,\ 501,\ 503] +$$
$$6\, n^6\, RW[105,\ 204,\ 306,\ 402,\ 501,\ 603] + 6\, n^5\, RW[105,\ 205,\ 304,\ 403,\ 501,\ 502] +$$
$$6\, n^6\, RW[105,\ 206,\ 304,\ 403,\ 501,\ 602] + 6\, n^6\, RW[106,\ 203,\ 302,\ 405,\ 504,\ 601] +$$
$$6\, n^6\, RW[106,\ 204,\ 305,\ 402,\ 503,\ 601] + 6\, n^6\, RW[106,\ 205,\ 304,\ 403,\ 502,\ 601],\ \ll 1 \gg,$$
$$\left. \ll 1 \gg,\ \ll 114 \gg,\ \ll 1 \gg,\ \ll 1 \gg,\ \ll 2512 \gg + \ll 1 \gg + 6\, n^6\, RW[106,\ 205,\ 304,\ 403,\ 502,\ 601] \right\}$$

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MonomialsIn[expr_] /; !MemberQ[{List, Plus, Times}, Head[expr]] := {expr};
MonomialsIn[p_Times] := {Replace[p, c_?NumberQ :> 1, {1}]};
MonomialsIn[l_List] := Union @@ (MonomialsIn /@ l);
MonomialsIn[s_Plus] := MonomialsIn[List @@ s];

ts = MonomialsIn[vs]

A very large output was generated. Here is a sample of it:

$$\left\{ n\, h[1]^2\, RW[],\ n^2\, RW[101],\ n^3\, RW[101],\ n^4\, RW[101],\ n^2\, h[1]\, RW[101],\ n^3\, h[1]\, RW[101], \right.$$
$$n^2\, h[1]^2\, RW[101],\ n^3\, h[1]^2\, RW[101],\ n^2\, h[1]^3\, RW[101],\ n^2\, h[2]\, RW[101],\ n^3\, h[2]\, RW[101],$$
$$\ll 1913 \gg,\ n^6\, RW[105,\ 203,\ 302,\ 406,\ 501,\ 604],\ n^5\, RW[105,\ 204,\ 303,\ 303,\ 402,\ 501],$$
$$n^5\, RW[105,\ 204,\ 304,\ 402,\ 403,\ 501],\ n^5\, RW[105,\ 204,\ 305,\ 402,\ 501,\ 503],$$
$$n^6\, RW[105,\ 204,\ 306,\ 402,\ 501,\ 603],\ n^5\, RW[105,\ 205,\ 304,\ 403,\ 501,\ 502],$$
$$n^6\, RW[105,\ 206,\ 304,\ 403,\ 501,\ 602],\ n^6\, RW[106,\ 203,\ 302,\ 405,\ 504,\ 601],$$
$$\left. n^6\, RW[106,\ 204,\ 305,\ 402,\ 503,\ 601],\ n^6\, RW[106,\ 205,\ 304,\ 403,\ 502,\ 601] \right\}$$

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```
rule = Dispatch[Thread[ts → Array[b, {Length[ts]}]]]
```

> A very large output was generated. Here is a sample of it:

$$\text{Dispatch}\Big[\big\{n\,h[1]^2\,RW[] \to b[1],\ n^2\,RW[101] \to b[2],\ n^3\,RW[101] \to b[3],\ n^4\,RW[101] \to b[4],$$
$$n^2\,h[1]\,RW[101] \to b[5],\ n^3\,h[1]\,RW[101] \to b[6],\ n^2\,h[1]^2\,RW[101] \to b[7],$$
$$n^3\,h[1]^2\,RW[101] \to b[8],\ \ll 1918 \gg,\ n^5\,RW[105, 204, 304, 402, 403, 501] \to b[1927],$$
$$n^5\,RW[105, 204, 305, 402, 501, 503] \to b[1928],$$
$$n^6\,RW[105, 204, 306, 402, 501, 603] \to b[1929],$$
$$n^5\,RW[105, 205, 304, 403, 501, 502] \to b[1930],$$
$$n^6\,RW[105, 206, 304, 403, 501, 602] \to b[1931],$$
$$n^6\,RW[106, 203, 302, 405, 504, 601] \to b[1932],$$
$$n^6\,RW[106, 204, 305, 402, 503, 601] \to b[1933],$$
$$n^6\,RW[106, 205, 304, 403, 502, 601] \to b[1934]\big\},\ - \ll 14 \gg -\Big]$$

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```
mat = SparseArray[
  Join @@ Table[
    v = vs[[i]];
    Table[
     t = v[[j]];
     c = t /. {_h → 1, _RW → 1, n → 1};
     {i, Replace[t / c, rule] /. b[k_] :> k} → c,
     {j, Length[v]}
    ],
    {i, Length[vs]}
   ],
  {Length[vs1], Length[ts]}
 ]
```

$$\text{SparseArray}[<171\,210>, \{120, 1934\}]$$

```
MatrixRank[mat]
```

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