Kamnitzer–Knutson–Mirkovic Conjecture

Zhijie asks about the following example.
In A_3 ($G = \mathbf{PGL}_4$) fix the usual reduced expression $\underline{\mathbf{i}} = (1,2,3,1,2,1)$ and consider the Lusztig datum $n_\bullet = (1,1,0,0,1,1)$.
The smallest λ and μ for the associated stable MV cycle satisfying Proposition XYZ in Section 2.2 of my thesis are

$$\lambda = (5,3,2,0) \qquad \mu = (3,3,2,2)$$

and the associated tableau is

1	1	1	2	3
2	2	4		
3	4			

By applying Conjecture 4.6.2 of my thesis we can say what the free entries in each column of a matrix A in the MVy slice to $\mathbb{O}_\lambda$ associated to this tableau. Let us fix notation for the coordinates of A.

$$A = \left[\begin{array}{ccc|ccc|cc|cc}
0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & c_1 & 0 & b_2 & a_3 & b_3 \\
\hline
0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & b_4 & a_5 & b_5 \\
\hline
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & b_6 \\
\hline
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0
\end{array}\right]$$

Our conjecture tells us that the circled entries will be the free entries, i.e. the nonzero variable entries. We went ahead and used this information to deduce and omit the entries that must be zero.
With the help of `M2` and speeding things up by substituting the first six prime numbers for the circled entries we find that the ideal of X_τ is

$$I = (b_1, a_6, a_4, a_2, a_1, -a_5 b_2 + a_3 b_4, b_2 b_6 + a_3, b_4 b_6 + a_5)$$

in $R = \mathbb{C}[a_1, \ldots, a_6, b_1, \ldots, b_6, c_1]$.
We compute its multidegree

$$\operatorname{mdeg} I = (\alpha_2 + \alpha_1)(\alpha_2 + \alpha_3)(\alpha_2 + \alpha_3 + \alpha_1)(\hbar + \alpha_1)(\alpha_1 \alpha_2 \alpha_3)$$

and Hilbert series

$$\operatorname{ch} I = \frac{1}{(1 - e^{\alpha_1 + \alpha_2 + \alpha_3 + \hbar})(1 - e^{\alpha_1 + \alpha_2 + \hbar})(1 - e^{\alpha_2 + \alpha_3 + \hbar})(1 - e^{\alpha_1 + 2\hbar})(1 - e^{\alpha_3 + \hbar})(1 - e^{\alpha_2 + \hbar})}$$

Now Zhijie would like to know what the Plucker coordinates are.
In my thesis I claim that the Plucker embedding is given by the minors $\Delta_C B$ of a certain matrix B using columns $C \in \binom{S}{mp-N}$. Here $m = 4$, $p = 5$, $N = 10$, and

$$S = ((k,0),(k,1),(k,2),(k,3),(k,4))_{k=1}^4$$

Recall $mp - N = \dim L/t^p L_0$ and S indexes the basis $v_{(i,j)} = [e_i t^j]$ of $V = L_0/t^p L_0$. The matrix B is the matrix whose row vectors are the basis vectors

$$[ge_1],[tge_1],[ge_2],[tge_2],[ge_3],[tge_3],[t^2ge_3],[ge_4],[tge_4],[t^2ge_4]$$

of $L/t^pL_0 \subset L_0/t^pL_0$.
In this case

$$g = g_A = \begin{bmatrix} t^3 & & & \\ -c_1t^2 & t^3 & & \\ -b_2t & -b_4t & t^2 & \\ -a_3 - b_3t & -a_5 - b_5t & -b_6t & t^2 \end{bmatrix}$$

so

$$\begin{aligned}
[ge_1] &= [t^3e_1] - c_1[t^2e_2] - b_2[te_3] - a_3[e_4] - b_3[te_4] \\
[tge_1] &= [t^4e_1] - c_1[t^3e_2] - b_2[t^2e_3] - a_3[te_4] - b_3[t^2e_4] \\
[ge_2] &= [t^3e_2] - b_4[te_3] - a_5[e_4] - b_5[te_4] \\
[tge_2] &= [t^4e_2] - b_4[t^2e_3] - a_5[te_4] - b_5[t^2e_4] \\
[ge_3] &= [t^2e_3] - b_6[te_4] \\
[tge_3] &= [t^3e_3] - b_6[t^2e_4] \\
[t^2ge_3] &= [t^4e_3] - b_6[t^3e_4] \\
[ge_4] &= [t^2e_4] \\
[tge_4] &= [t^3e_4] \\
[t^2ge_4] &= [t^4e_4]
\end{aligned}$$

and, omitting zero columns, we get

$$\begin{array}{c|cccccccccccccc}
 & [t^3e_1] & [t^4e_1] & [t^2e_2] & [t^3e_2] & [t^4e_2] & [te_3] & [t^2e_3] & [t^3e_3] & [t^4e_3] & [e_4] & [te_4] & [t^2e_4] & [t^3e_4] & [t^4e_4] \\
\hline
[ge_1] & 1 & & -c_1 & & & -b_2 & & & & -a_3 & -b_3 & & & \\
[tge_1] & & 1 & & -c_1 & & & -b_2 & & & & -a_3 & -b_3 & & \\
[ge_2] & & & & 1 & & -b_4 & & & & -a_5 & -b_5 & & & \\
[tge_2] & & & & & 1 & & -b_4 & & & & -a_5 & -b_5 & & \\
[ge_3] & & & & & & & 1 & & & & -b_6 & & & \\
[tge_3] & & & & & & & & 1 & & & & -b_6 & & \\
[t^2ge_3] & & & & & & & & & 1 & & & & -b_6 & \\
[ge_4] & & & & & & & & & & & & 1 & & \\
[tge_4] & & & & & & & & & & & & & 1 & \\
[t^2ge_4] & & & & & & & & & & & & & & 1
\end{array}$$

for B so $C_0 = \{(1,3),(1,4),(2,3),(2,4),(3,2),(3,3),(3,4),(4,2),(4,3),(4,4)\}$.

Finding Plucker coordinates in M2

```
R = QQ[a_1,b_1,c_1,a_2,b_2,a_3,b_3,a_4,b_4,a_5,b_5,a_6,b_6,Degrees
   =>{{1,0,0,0},{1,0,0,1},{1,0,0,2},{1,1,0,0},{1,1,0,1},{1,1,1,0},{1,1,1,1},{0,1,0,0

J = ideal(b_1,a_6,a_4,a_2,a_1,-a_5*b_2+a_3*b_4,b_2*b_6+a_3,b_4*b_6+a_5)

plm = matrix{{1,0,-c_1,0,0,-b_2,0,0,0,-a_3,-b_3,0,0,0}, {0,1,0,-c_1
   ,0,0,-b_2,0,0,0,-a_3,-b_3,0,0},{0,0,0,1,0,-b_4,0,0,0,-a_5,-b_5
   ,0,0,0},{0,0,0,0,1,0,-b_4,0,0,0,-a_5,-b_5
   ,0,0},{0,0,0,0,0,0,1,0,0,0,-b_6,0,0,0},{0,0,0,0,0,0,0,1,0,0,0,-b_6
   ,0,0},{0,0,0,0,0,0,0,0,1,0,0,0,-b_6
   ,0},{0,0,0,0,0,0,0,0,0,0,1,0,0},{0,0,0,0,0,0,0,0,0,0,0,0,1,0},{0,0,0,0,0,0,0,0,

s = subsets(14,10);

e0 = {0..9}

mins := {}

for e in s do if ( det(plm^e0_e) != 0 ) then mins = append(mins,det(plm
   ^e0_e))

inds := {}

for e in s do if ( det(plm^e0_e) != 0 ) then inds = append(inds,e)

% check that #inds == #mins

wts := {}

for e in s do if ( det(plm^e0_e) != 0 ) then wts = append(wts,degree(
   det(plm^e0_e)))

pluck = QQ[apply(inds,i->p_i)]

f = map(R,pluck,mins)

Q = R/J

fbar = map(Q,pluck,mins)

K = kernel fbar

Kh = homogenize(K,p_{0,1,3,4,6,7,8,11,12,13})

indsnu := {}

for i in 0..#wts-1 do if take(wts#i,3)=={1,1,1} then indsnu = append(
```

```
    indsnu,inds#i)

I = ideal(apply(indsnu,i->p_i))

Knu = K + I

dim Knu

Knuh = homogenize(Knu,p_{0,1,3,4,6,7,8,11,12,13})

dim Knuh

% check that dim Kh = 7 = dim J + 1
```

Fixed point subscheme

In this case I would like the fixed point subscheme supported at $t^{(4,3,2,1)}$.
Let $\nu = (4,3,2,1)$ and note that $\lambda \geq \nu \geq \mu$.

1. Take a/the chart containing the fixed point t^ν by asking that $\Delta_C \neq 0$ for any C such that $\mathrm{wt}(\Delta_C) = \nu$. This amounts to dehomogenizing (e.g. setting equal to 1) *all?* such Δ_C. I think this is tantamount to not homogenizing in the first place.

2. Mod out by the generators of K whose weight is not equal to $\lambda - \nu$.

Where

$(p_{\{4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{3, 5, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{1, 5, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 6,}$

$p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 4, 5, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{0, 4, 5, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{2, 3, 5, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 3, 5, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{0, 3, 5, 6}$

$p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 2, 3, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{0, 1, 3, 6, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 2, 4, 5, 7, 8, 10, 11, 12, 13\}} + p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{3, 4, 5,}$

$p_{\{2, 3, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 3, 4, 6, 7, 8, 9, 11, 12, 13\}} + p_{\{1, 3, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 6, 7, 8, 9, 11, 12, 13\}} + p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 2, 4, 6,}$

$p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{0, 1, 4, 6, 7, 8, 9, 11, 12, 13\}} + p_{\{0, 1, 4, 5, 7, 8, 10, 11, 12, 13\}}, p_{\{1, 2, 4, 5, 6, 7, 8, 11, 12, 13\}} + p_{\{0, 3, 4, 5, 6, 7, 8, 11, 12, 13\}}, p_{\{0, 1, 3, 4,}$

$1, p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7}$

$p_{\{0, 1, 4, 7, 8, 9, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{3, 4, 5, 6, 7, 8, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{1, 4, 5, 6, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8,}$

$p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 1, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8,}$

$p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 1, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8,}$

$p_{\{0, 1, 3, 4, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 4, 5, 6, 7, 8, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 3, 4, 5, 6, 7, 8, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9,}$

$p_{\{0, 1, 4, 5, 6, 7, 8, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{3, 4, 5, 6, 7,}$

$p_{\{2, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{1, 4, 5, 6, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8,}$

$p_{\{1, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{1, 4, 5, 6, 7, 8, 10, 11, 12, 13\}} p_{\{1, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{1, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{1, 4, 6, 7, 8,}$

$p_{\{1, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{1, 2, 3, 4, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{1, 3, 4, 7, 8,}$

$p_{\{1, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 4, 5, 6, 7, 8, 11, 12, 13\}} p_{\{1, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{1, 3, 4, 5, 6, 7, 8, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9,}$

$p_{\{0, 1, 4, 7, 8, 9, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{3, 4, 5, 6, 7, 8, 10, 11, 12, 13\}} p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8,}$

$p_{\{0, 1, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8,}$

$p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{1, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} + p_{\{0, 1, 3, 4, 7, 8, 10, 11, 12, 13\}} p_{\{3, 4, 6, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{0, 3, 4, 7, 8,}$

$p_{\{0, 1, 4, 6, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{2, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8,}$

$p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{1, 3, 4, 7, 8, 9, 10, 11, 12, 13\}}, p_{\{0, 3, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{0, 3, 4, 7, 8, 9, 10, 11, 12, 13\}} - p_{\{0, 1, 4, 5, 7, 8, 10, 11, 12, 13\}} p_{\{2, 3, 4, 7, 8,}$

$p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,7,8,9,10,11,12,13\}}-p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,}$

$p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,1}$

$p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{3,4,5,6,7,8,10,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}+p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{1,4,5,6,}$

$p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{2,3,4,6,7,8,10,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,6,7,8,10,11,12,13\}}p_{\{2,3,4,7,8,}$

$p_{\{0,1,4,6,7,8,10,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}}+p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{0,3,4,6,7,8,10,11,12,13\}}p_{\{0,1,4,7,8,}$

$p_{\{0,1,4,6,7,8,10,11,12,13\}}p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,7,8,10,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,7,8,}$

$p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{0,3,4,7,8,}$

$p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,7,8,9,1}$

$p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,7,8,10,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}}+p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{1,3,4,5,7,}$

$p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}}+p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}}+p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,}$

$p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{2,3,4,6,7,8,10,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}-p_{\{0,3,4,6,7,8,10,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{0,3,4,6,}$

$p_{\{0,1,4,6,7,8,10,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{2,3,4,5,7,8,10,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}+p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,}$

$p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}+p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}-p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{0,1,3,4,7,}$

$p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}-p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{0,3,4,5,6,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{1,4,5,6,7,8,10,11,12,13\}}+p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{2,3,4,5,7,}$

$p_{\{1,3,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}}-p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,6,7,8,}$

$p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}}+p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{3,4,5,6,7,8,10,11,12,13\}},p^2_{\{0,3,4,6,7,8,10,11,12,13\}}-$

$p_{\{0,1,4,6,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{2,3,4,5,7,8,10,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}}-p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,}$

$p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{1,3,4,6,7,8,10,11,12,13\}}-p_{\{3,4,6,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}}-$

$p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}}+p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,}$

$p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}}-p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,6,7,8,1}$

$p_{\{3,4,5,6,7,8,10,11,12,13\}},p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{1,2,3,4,6,}$

$p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{2,3,4,5,7,8,10,11,12,13\}}p_{\{0,1,4,6,7,8,10,11,12,13\}}-p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{1,3,4,5,}$

$p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{1,3,4,6,7,8,10,11,12,13\}}-p_{\{1,4,6,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{0,1,4,6,7,8,10,11,12,13\}}-$

$p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{0,1,4,6,7,8,10,11,12,13\}}+p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{0,3,4,6,7,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,6,7,8,10,11,12,13\}},p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,6,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,6,7,8,1}$

$p_{\{1,4,5,6,7,8,10,11,12,13\}},p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,6,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,6,7,8,10,11,12,13\}},p_{\{1,2,3,4,6,}$

$p_{\{0,3,4,6,7,8,10,11,12,13\}},p^2_{\{2,3,4,5,7,8,10,11,12,13\}}-p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{1,3,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,5,7,}$

$p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}}-p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}}-p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,}$

$p_{\{2,3,4,7,8,9,10,11,12,13\}},p^2_{\{1,3,4,5,7,8,10,11,12,13\}}-p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,3,4,5,7,8,10,11,12,13\}}p_{\{1,3,4,5,7,}$

$p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,1,4,5,7,8,10,11,12,13\}}p_{\{1,3,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,}$

$p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{1,3,4,5,7,8,10,11,12,13\}}-p_{\{1,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,}$

$p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}},p^2_{\{0,3,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{0,1,4,5,7,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{0,3,4,5,7,8,10,11,12,13\}}+p_{\{2,3,4,7,8,9,10,11,12,13\}},p_{\{0,1,3,4,7,}$

$p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,5,7,8,10,11,12,13\}}-p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}},p_{\{1,3,4,5,6,}$

$p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,5,7,8,10,11,12,13\}},p_{\{0,3,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,5,7,8,1}$

$p_{\{2,3,4,5,7,8,10,11,12,13\}},p^2_{\{0,1,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,7,8,9,10,11,12,13\}},p_{\{1,2,3,4,7,8,10,11,12,13\}}p_{\{0,1,4,5,7,}$

$p_{\{0,3,4,7,8,9,10,11,12,13\}},p_{\{0,1,3,4,7,8,10,11,12,13\}}p_{\{0,1,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,7,8,9,10,11,12,13\}},p_{\{2,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,5,7,}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}},p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{0,1,4,5,7,8,10,11,12,13\}}-p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{1,3,4,5,7,8,1}$

$p_{\{0,1,4,5,6,7,8,11,12,13\}}p_{\{0,3,4,5,7,8,10,11,12,13\}},p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{0,1,4,5,7,8,10,11,12,13\}}+p_{\{0,3,4,5,7,8,10,11,12,13\}},p_{\{2,3,4,5,6,}$

$p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{2,3,4,5,7,8,10,11,12,13\}},p_{\{1,3,4,5,6,7,8,11,12,13\}}p_{\{1,2,3,4,7,8,10,11,12,13\}}-p_{\{1,2,3,4,6,7,8,11,12,13\}}p_{\{1,3,4,5,7,8,1}$

$p_{\{2,3,4,5,7,8,10,11,12,13\}}, p_{\{0,1,4,5,6,7,8,11,12,13\}} p_{\{1,2,3,4,7,8,10,11,12,13\}} + p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{2,3,4,5,6,7,8,11,12,13\}} p_{\{0,1,3,4,7,8}$

$p_{\{2,3,4,5,7,8,10,11,12,13\}}, p_{\{1,3,4,5,6,7,8,11,12,13\}} p_{\{0,1,3,4,7,8,10,11,12,13\}} - p_{\{1,3,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,5,6,7,8,11,12,13\}} p_{\{0,1,3,4,7,8}$

$p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{0,1,4,5,6,7,8,11,12,13\}} p_{\{0,1,3,4,7,8,10,11,12,13\}} - p_{\{0,1,4,5,7,8,10,11,12,13\}}, p_{\{1,2,3,4,6,7,8,11,12,13\}} p_{\{0,1,3,4,7,8}$

$p_{\{1,2,3,4,7,8,10,11,12,13\}}, p^2_{\{0,3,4,5,6,7,8,11,12,13\}} - p_{\{0,1,4,5,6,7,8,11,12,13\}} p_{\{2,3,4,5,6,7,8,11,12,13\}}, p_{\{1,2,3,4,6,7,8,11,12,13\}} p_{\{0,3,4,5,6,7,8}$

$p_{\{2,3,4,5,6,7,8,11,12,13\}}, p_{\{1,2,3,4,6,7,8,11,12,13\}} p_{\{0,1,4,5,6,7,8,11,12,13\}} + p_{\{0,3,4,5,6,7,8,11,12,13\}})$

$(p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{0,1,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,5,6,7,8,11,12,13\}}, p_{\{0,3,4,7,8,9,10,11,12,13\}}, p_{\{2,3,4,5,7,8,10,11}$

$(p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{0,1,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,5,6,7,8,11,12,13\}}, p_{\{0,3,4,7,8,9,10,11,12,13\}}, p_{\{2,3,4,5,7,8,10,11}$

$\Big(p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,5,6,7,8,11,12,13\}}, p_{\{0,3,4,7,8,9,10,11,12,13\}}, p_{\{2,3,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,6,7,8,10,11}$

$\Big(p_{\{0,3,4,5,7,8,10,11,12,13\}}, p_{\{0,1,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,7,8,9,10,11,12,13\}}, p_{\{2,3,4,5,7,8,10,11,12,13\}}, p_{\{0,3,4,6,7,8,10,1}$

Do Zhijie's smaller example

to make sure...