Model for "Th"

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General Condition

- Basis type: `jml`
- SAMB selection:
  - Type: `[Q, G]`
  - Rank: `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]`
  - Irrep.: $[A_g, E_g, T_g, A_u, E_u, T_u]$
  - Spin (s): `[0, 1]`
- Max. neighbor: `10`
- Search cell range: `(-2, 3), (-2, 3), (-2, 3)`
- Toroidal priority: `false`

Group and Unit Cell

- Group: PG No. 29 $T_{\rm h}$ $m\bar{3}$ [cubic]
- Unit cell:
  $a =$ 1.00000, $b =$ 1.00000, $c =$ 1.00000, $\alpha =$ 90.0, $\beta =$ 90.0, $\gamma =$ 90.0
- Lattice vectors (conventional cell):
  $\boldsymbol{a}_1 =$ [1.00000, 0.00000, 0.00000]
  $\boldsymbol{a}_2 =$ [0.00000, 1.00000, 0.00000]
  $\boldsymbol{a}_3 =$ [0.00000, 0.00000, 1.00000]

Symmetry Operation

Table 1: Symmetry operation

#	SO	#	SO	#	SO	#	SO	#	SO
1	1	2	2_{001}	3	2_{010}	4	2_{100}	5	3^{+}_{111}
6	3^{+}_{-11-1}	7	3^{+}_{1-1-1}	8	3^{+}_{-1-11}	9	3^{-}_{111}	10	3^{-}_{1-1-1}

continued ...

Table 1

#	SO	#	SO	#	SO	#	SO	#	SO
11	3^{-}_{-1-11}	12	3^{-}_{-11-1}	13	-1	14	m_{001}	15	m_{010}
16	m_{100}	17	-3^{+}_{111}	18	-3^{+}_{-11-1}	19	-3^{+}_{1-1-1}	20	-3^{+}_{-1-11}
21	-3^{-}_{111}	22	-3^{-}_{1-1-1}	23	-3^{-}_{-1-11}	24	-3^{-}_{-11-1}		

Harmonics

Table 2: Harmonics

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
1	$\mathbb{Q}_0(A_g)$	A_g	0	Q, T	-	-	1
2	$\mathbb{G}_3(A_g)$	A_g	3	G, M	-	-	$\sqrt{15}xyz$
3	$\mathbb{Q}_4(A_g)$	A_g	4	Q, T	-	-	$\frac{\sqrt{21}\left(x^4-3x^2y^2-3x^2z^2+y^4-3y^2z^2+z^4\right)}{6}$
4	$\mathbb{G}_0(A_u)$	A_u	0	G, M	-	-	1
5	$\mathbb{Q}_3(A_u)$	A_u	3	Q, T	-	-	$\sqrt{15}xyz$
6	$\mathbb{G}_4(A_u)$	A_u	4	G, M	-	-	$\frac{\sqrt{21}\left(x^4-3x^2y^2-3x^2z^2+y^4-3y^2z^2+z^4\right)}{6}$
7	$\mathbb{Q}_{2,1}(E_g)$	E_g	2	Q, T	-	1	$-\frac{x^2}{2}-\frac{y^2}{2}+z^2$
8	$\mathbb{Q}_{2,2}(E_g)$					2	$\frac{\sqrt{3}(x-y)(x+y)}{2}$
9	$\mathbb{Q}_{4,1}(E_g)$	E_g	4	Q, T	-	1	$-\frac{\sqrt{15}\left(x^4-12x^2y^2+6x^2z^2+y^4+6y^2z^2-2z^4\right)}{12}$

continued ...

Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
10	$\mathbb{Q}_{4,2}(E_g)$					2	$\frac{\sqrt{5}(x-y)(x+y)\left(x^2+y^2-6z^2\right)}{4}$
11	$\mathbb{G}_{2,1}(E_u)$	E_u	2	G, M	-	1	$-\frac{x^2}{2}-\frac{y^2}{2}+z^2$
12	$\mathbb{G}_{2,2}(E_u)$					2	$\frac{\sqrt{3}(x-y)(x+y)}{2}$
13	$\mathbb{G}_{4,1}(E_u)$	E_u	4	G, M	-	1	$-\frac{\sqrt{15}\left(x^4-12x^2y^2+6x^2z^2+y^4+6y^2z^2-2z^4\right)}{12}$
14	$\mathbb{G}_{4,2}(E_u)$					2	$\frac{\sqrt{5}(x-y)(x+y)\left(x^2+y^2-6z^2\right)}{4}$
15	$\mathbb{Q}_{5,1}(E_u)$	E_u	5	Q, T	-	1	$\frac{3\sqrt{35}xyz(x-y)(x+y)}{2}$
16	$\mathbb{Q}_{5,2}(E_u)$					2	$\frac{\sqrt{105}xyz\left(x^2+y^2-2z^2\right)}{2}$
17	$\mathbb{G}_{1,1}(T_g)$	T_g	1	G, M	-	1	x
18	$\mathbb{G}_{1,2}(T_g)$					2	y
19	$\mathbb{G}_{1,3}(T_g)$					3	z
20	$\mathbb{Q}_{2,1}(T_g)$	T_g	2	Q, T	-	1	$\sqrt{3}yz$
21	$\mathbb{Q}_{2,2}(T_g)$					2	$\sqrt{3}xz$
22	$\mathbb{Q}_{2,3}(T_g)$					3	$\sqrt{3}xy$
23	$\mathbb{G}_{3,1}(T_g,1)$	T_g	3	G, M	1	1	$\frac{x\left(2x^2-3y^2-3z^2\right)}{2}$
24	$\mathbb{G}_{3,2}(T_g,1)$					2	$-\frac{y\left(3x^2-2y^2+3z^2\right)}{2}$
25	$\mathbb{G}_{3,3}(T_g,1)$					3	$-\frac{z\left(3x^2+3y^2-2z^2\right)}{2}$
26	$\mathbb{G}_{3,1}(T_g,2)$	T_g	3	G, M	2	1	$\frac{\sqrt{15}x(y-z)(y+z)}{2}$
27	$\mathbb{G}_{3,2}(T_g,2)$					2	$-\frac{\sqrt{15}y(x-z)(x+z)}{2}$
28	$\mathbb{G}_{3,3}(T_g,2)$					3	$\frac{\sqrt{15}z(x-y)(x+y)}{2}$
29	$\mathbb{Q}_{4,1}(T_g,1)$	T_g	4	Q, T	1	1	$\frac{\sqrt{35}yz(y-z)(y+z)}{2}$
30	$\mathbb{Q}_{4,2}(T_g,1)$					2	$-\frac{\sqrt{35}xz(x-z)(x+z)}{2}$

continued …

Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
31	$\mathbb{Q}_{4,3}(T_g,1)$					3	$\frac{\sqrt{35}xy(x-y)(x+y)}{2}$
32	$\mathbb{Q}_{4,1}(T_g,2)$	T_g	4	Q, T	2	1	$\frac{\sqrt{5}yz\left(6x^2-y^2-z^2\right)}{2}$
33	$\mathbb{Q}_{4,2}(T_g,2)$					2	$-\frac{\sqrt{5}xz\left(x^2-6y^2+z^2\right)}{2}$
34	$\mathbb{Q}_{4,3}(T_g,2)$					3	$-\frac{\sqrt{5}xy\left(x^2+y^2-6z^2\right)}{2}$
35	$\mathbb{Q}_{1,1}(T_u)$	T_u	1	Q, T	-	1	x
36	$\mathbb{Q}_{1,2}(T_u)$					2	y
37	$\mathbb{Q}_{1,3}(T_u)$					3	z
38	$\mathbb{G}_{2,1}(T_u)$	T_u	2	G, M	-	1	$\sqrt{3}yz$
39	$\mathbb{G}_{2,2}(T_u)$					2	$\sqrt{3}xz$
40	$\mathbb{G}_{2,3}(T_u)$					3	$\sqrt{3}xy$
41	$\mathbb{Q}_{3,1}(T_u,1)$	T_u	3	Q, T	1	1	$\frac{x\left(2x^2-3y^2-3z^2\right)}{2}$
42	$\mathbb{Q}_{3,2}(T_u,1)$					2	$-\frac{y\left(3x^2-2y^2+3z^2\right)}{2}$
43	$\mathbb{Q}_{3,3}(T_u,1)$					3	$-\frac{z\left(3x^2+3y^2-2z^2\right)}{2}$
44	$\mathbb{Q}_{3,1}(T_u,2)$	T_u	3	Q, T	2	1	$\frac{\sqrt{15}x(y-z)(y+z)}{2}$
45	$\mathbb{Q}_{3,2}(T_u,2)$					2	$-\frac{\sqrt{15}y(x-z)(x+z)}{2}$
46	$\mathbb{Q}_{3,3}(T_u,2)$					3	$\frac{\sqrt{15}z(x-y)(x+y)}{2}$
47	$\mathbb{G}_{4,1}(T_u,1)$	T_u	4	G, M	1	1	$\frac{\sqrt{35}yz(y-z)(y+z)}{2}$
48	$\mathbb{G}_{4,2}(T_u,1)$					2	$-\frac{\sqrt{35}xz(x-z)(x+z)}{2}$
49	$\mathbb{G}_{4,3}(T_u,1)$					3	$\frac{\sqrt{35}xy(x-y)(x+y)}{2}$
50	$\mathbb{G}_{4,1}(T_u,2)$	T_u	4	G, M	2	1	$\frac{\sqrt{5}yz\left(6x^2-y^2-z^2\right)}{2}$
51	$\mathbb{G}_{4,2}(T_u,2)$					2	$-\frac{\sqrt{5}xz\left(x^2-6y^2+z^2\right)}{2}$

continued ...

Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
52	$\mathbb{G}_{4,3}(T_u,2)$					3	$-\frac{\sqrt{5}xy\left(x^2+y^2-6z^2\right)}{2}$
53	$\mathbb{Q}_{5,1}(T_u,3)$	T_u	5	Q, T	3	1	$\frac{\sqrt{105}x(y-z)(y+z)\left(2x^2-y^2-z^2\right)}{4}$
54	$\mathbb{Q}_{5,2}(T_u,3)$					2	$\frac{\sqrt{105}y(x-z)(x+z)\left(x^2-2y^2+z^2\right)}{4}$
55	$\mathbb{Q}_{5,3}(T_u,3)$					3	$-\frac{\sqrt{105}z(x-y)(x+y)\left(x^2+y^2-2z^2\right)}{4}$

Basis in full matrix

Table 3: dimension = 48

#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)
0	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(1)	1	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(1)	2	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(1)	3	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(1)	4	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(1)
5	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(1)	6	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(2)	7	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(2)	8	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(2)	9	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(2)
10	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(2)	11	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(2)	12	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(3)	13	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(3)	14	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(3)
15	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(3)	16	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(3)	17	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(3)	18	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(4)	19	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(4)
20	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(4)	21	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(4)	22	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(4)	23	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(4)	24	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(5)
25	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(5)	26	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(5)	27	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(5)	28	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(5)	29	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(5)
30	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(6)	31	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(6)	32	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(6)	33	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(6)	34	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(6)
35	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(6)	36	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(7)	37	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(7)	38	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(7)	39	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(7)
40	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(7)	41	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(7)	42	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$ @A(8)	43	$\lvert\frac{1}{2},-\frac{1}{2};p\rangle$ @A(8)	44	$\lvert\frac{3}{2},\frac{3}{2};p\rangle$ @A(8)

continued ...

Table 3

	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)
	45	$\lvert\frac{3}{2},\frac{1}{2};p\rangle$ @A(8)	46	$\lvert\frac{3}{2},-\frac{1}{2};p\rangle$ @A(8)	47	$\lvert\frac{3}{2},-\frac{3}{2};p\rangle$ @A(8)				

SAMB

230 (all 552) SAMBs

- 'A' site-cluster
  - * bra: $\langle\frac{1}{2},\frac{1}{2};p\rvert$, $\langle\frac{1}{2},-\frac{1}{2};p\rvert$, $\langle\frac{3}{2},\frac{3}{2};p\rvert$, $\langle\frac{3}{2},\frac{1}{2};p\rvert$, $\langle\frac{3}{2},-\frac{1}{2};p\rvert$, $\langle\frac{3}{2},-\frac{3}{2};p\rvert$
  - * ket: $\lvert\frac{1}{2},\frac{1}{2};p\rangle$, $\lvert\frac{1}{2},-\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},\frac{3}{2};p\rangle$, $\lvert\frac{3}{2},\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},-\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},-\frac{3}{2};p\rangle$
  - * wyckoff: `8b`

$\boxed{\text{z1}}$ $\mathbb{Q}_{0}^{(c)}(A_g,a)=\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{0}^{(s)}(A_g)$

$$\boxed{\text{z2}}\quad \mathbb{Q}_{0}^{(c)}(A_g,b)=\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$$\boxed{\text{z3}}\quad \mathbb{Q}_{0}^{(1,-1;c)}(A_g)=\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$\boxed{\text{z4}}$ $\mathbb{Q}_{0}^{(1,1;c)}(A_g)=\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{0}^{(s)}(A_g)$

$$\boxed{\text{z5}}\quad \mathbb{G}_{3}^{(1,0;c)}(A_g)=\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$\boxed{\text{z27}}$ $\mathbb{Q}_{3}^{(c)}(A_u,a)=\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{3}^{(s)}(A_u)$

$$\boxed{\text{z28}}\quad \mathbb{Q}_{3}^{(c)}(A_u,b)=\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

$$\boxed{\text{z29}}\quad \mathbb{Q}_{3}^{(1,-1;c)}(A_u)=\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

$\boxed{\text{z30}}$ $\mathbb{Q}_3^{(1,1;c)}(A_u) = \mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_3^{(s)}(A_u)$

$\boxed{\text{z31}}$ $\mathbb{G}_0^{(1,0;c)}(A_u) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$

$\boxed{\text{z32}}$ $\mathbb{Q}_{2,1}^{(c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_0^{(s)}(A_g)}{2}$

$\boxed{\text{z33}}$ $\mathbb{Q}_{2,2}^{(c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_0^{(s)}(A_g)}{2}$

$\boxed{\text{z34}}$ $\mathbb{Q}_{2,1}^{(c)}(E_g, b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z35}}$ $\mathbb{Q}_{2,2}^{(c)}(E_g, b) = -\frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{2} + \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{2}$

$\boxed{\text{z36}}$ $\mathbb{Q}_{2,1}^{(1,-1;c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_0^{(s)}(A_g)}{2}$

$\boxed{\text{z79}}$ $\mathbb{Q}_{2,2}^{(1,-1;c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_0^{(s)}(A_g)}{2}$

$\boxed{\text{z80}}$ $\mathbb{Q}_{2,1}^{(1,-1;c)}(E_g, b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z81}}$ $\mathbb{Q}_{2,2}^{(1,-1;c)}(E_g, b) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{2} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{2}$

$\boxed{\text{z82}}$ $\mathbb{Q}_{2,1}^{(1,0;c)}(E_g) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{2} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{2}$

$\boxed{\text{z83}}$ $\mathbb{Q}_{2,2}^{(1,0;c)}(E_g) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z84}}$ $\mathbb{Q}_{5,1}^{(c)}(E_u) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_3^{(s)}(A_u)}{2}$

$\boxed{\text{z85}}$ $\mathbb{Q}_{5,2}^{(c)}(E_u) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_3^{(s)}(A_u)}{2}$

$\boxed{\text{z86}}$ $\mathbb{Q}_{5,1}^{(1,-1;c)}(E_u) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3}^{(s)}(A_u)}{2}$

$\boxed{\text{z87}}$ $\mathbb{Q}_{5,2}^{(1,-1;c)}(E_u) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3}^{(s)}(A_u)}{2}$

$\boxed{\text{z88}}$ $\mathbb{G}_{2,1}^{(c)}(E_u) = -\frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{2} + \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{2}$

$\boxed{\text{z89}}$ $\mathbb{G}_{2,2}^{(c)}(E_u) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$

$\boxed{\text{z90}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(E_u) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{2} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{2}$

$\boxed{\text{z91}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(E_u) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$

$\boxed{\text{z92}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(E_u) = -\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$

$\boxed{\text{z93}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(E_u) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{2} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{2}$

$\boxed{\text{z94}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}$

$\boxed{\text{z95}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}$

$\boxed{\text{z96}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z97}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g, b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z98}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g, b) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z99}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g, b) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z100}}$ $$\mathbb{Q}_{2,1}^{(c)}(T_g,c)=\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{30}-\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}$$

$\boxed{\text{z101}}$ $$\mathbb{Q}_{2,2}^{(c)}(T_g,c)=\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{30}+\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}$$

$\boxed{\text{z102}}$ $$\mathbb{Q}_{2,3}^{(c)}(T_g,c)=-\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15}+\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}$$

$\boxed{\text{z103}}$ $$\mathbb{Q}_{4,1}^{(c)}(T_g,1)=-\frac{\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{2}-\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$$

$\boxed{\text{z104}}$ $$\mathbb{Q}_{4,2}^{(c)}(T_g,1)=\frac{\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{2}-\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$$

$\boxed{\text{z105}}$ $$\mathbb{Q}_{4,3}^{(c)}(T_g,1)=\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$\boxed{\text{z106}}$ $$\mathbb{Q}_{4,1}^{(c)}(T_g,2)=-\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}+\frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}+\frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15}+\frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{15}$$

$\boxed{\text{z107}}$ $$\mathbb{Q}_{4,2}^{(c)}(T_g,2)=-\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}+\frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15}-\frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}+\frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{15}$$

$\boxed{\text{z108}}$ $$\mathbb{Q}_{4,3}^{(c)}(T_g,2)=\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{5}+\frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{15}+\frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{15}$$

$\boxed{\text{z109}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,a)=\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$$

$\boxed{\text{z110}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,a)=\frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$$

$\boxed{\text{z111}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,a)=\frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$$

$\boxed{\text{z112}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,b)=\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{30}-\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}$$

$\boxed{\text{z113}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,b)=\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{30}+\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}$$

$\boxed{\text{z114}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10}$$

$\boxed{\text{z115}}$ $$\mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,1) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{2} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$$

$\boxed{\text{z116}}$ $$\mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,1) = \frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{2} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$$

$\boxed{\text{z117}}$ $$\mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,1) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$\boxed{\text{z118}}$ $$\mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,2) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15} + \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{15}$$

$\boxed{\text{z119}}$ $$\mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,2) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{15}$$

$\boxed{\text{z120}}$ $$\mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,2) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{5} + \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{15} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{15}$$

$\boxed{\text{z121}}$ $$\mathbb{Q}_{2,1}^{(1,0;c)}(T_g) = -\frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$$

$\boxed{\text{z122}}$ $$\mathbb{Q}_{2,2}^{(1,0;c)}(T_g) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$$

$\boxed{\text{z123}}$ $$\mathbb{Q}_{2,3}^{(1,0;c)}(T_g) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$$

$\boxed{\text{z277}}$ $$\mathbb{Q}_{2,1}^{(1,1;c)}(T_g) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}$$

$\boxed{\text{z278}}$ $$\mathbb{Q}_{2,2}^{(1,1;c)}(T_g) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}$$

$\boxed{\text{z279}}$ $$\mathbb{Q}_{2,3}^{(1,1;c)}(T_g) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$\boxed{\text{z280}}$ $$\mathbb{G}_{1,1}^{(c)}(T_g) = -\frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$$

$\boxed{\text{z281}}$ $\mathbb{G}_{1,2}^{(c)}(T_g) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z297}}$ $\mathbb{G}_{1,3}^{(c)}(T_g) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z298}}$ $\mathbb{G}_{1,1}^{(1,-1;c)}(T_g) = -\frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$

$\boxed{\text{z299}}$ $\mathbb{G}_{1,2}^{(1,-1;c)}(T_g) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z300}}$ $\mathbb{G}_{1,3}^{(1,-1;c)}(T_g) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z301}}$ $\mathbb{G}_{1,1}^{(1,0;c)}(T_g, a) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z302}}$ $\mathbb{G}_{1,2}^{(1,0;c)}(T_g, a) = \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z303}}$ $\mathbb{G}_{1,3}^{(1,0;c)}(T_g, a) = \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(s)}(A_g)}{3}$

$\boxed{\text{z304}}$ $\mathbb{G}_{1,1}^{(1,0;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6}$

$\boxed{\text{z305}}$ $\mathbb{G}_{1,2}^{(1,0;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z306}}$ $\mathbb{G}_{1,3}^{(1,0;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{6}$

$\boxed{\text{z337}}$ $\mathbb{Q}_{1,1}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

$\boxed{\text{z338}}$ $\mathbb{Q}_{1,2}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}$

$\boxed{\text{z339}}$ $\mathbb{Q}_{1,3}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$

$\boxed{\text{z340}}$ $\mathbb{Q}_{1,1}^{(c)}(T_u,b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z341}}$ $\mathbb{Q}_{1,2}^{(c)}(T_u,b) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z342}}$ $\mathbb{Q}_{1,3}^{(c)}(T_u,b) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z343}}$ $\mathbb{Q}_{1,1}^{(c)}(T_u,c) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10}$

$\boxed{\text{z344}}$ $\mathbb{Q}_{1,2}^{(c)}(T_u,c) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10}$

$\boxed{\text{z345}}$ $\mathbb{Q}_{1,3}^{(c)}(T_u,c) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10}$

$\boxed{\text{z346}}$ $\mathbb{Q}_{3,1}^{(c)}(T_u,1) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{15}$

$\boxed{\text{z347}}$ $\mathbb{Q}_{3,2}^{(c)}(T_u,1) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{15}$

$\boxed{\text{z348}}$ $\mathbb{Q}_{3,3}^{(c)}(T_u,1) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{15}$

$\boxed{\text{z349}}$ $\mathbb{Q}_{3,1}^{(c)}(T_u,2) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}$

$\boxed{\text{z350}}$ $\mathbb{Q}_{3,2}^{(c)}(T_u,2) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} - \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

$\boxed{\text{z351}}$ $\mathbb{Q}_{3,3}^{(c)}(T_u,2) = -\frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

$\boxed{\text{z352}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z353}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z354}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z355}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10}$

$\boxed{\text{z356}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10}$

$\boxed{\text{z357}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,b) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10}$

$\boxed{\text{z358}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,1) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{15}$

$\boxed{\text{z359}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,1) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{15}$

$\boxed{\text{z360}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,1) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{15}$

$\boxed{\text{z361}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}$

$\boxed{\text{z362}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

$\boxed{\text{z363}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

$\boxed{\text{z364}}$ $\mathbb{Q}_{1,1}^{(1,0;c)}(T_u) = \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6}$

$\boxed{\text{z365}}$ $\mathbb{Q}_{1,2}^{(1,0;c)}(T_u) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$

$\boxed{\text{z366}}$ $\mathbb{Q}_{1,3}^{(1,0;c)}(T_u) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$

$\boxed{\text{z367}}$ $\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,2) = -\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$

$\boxed{\text{z368}}$ $$\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,2) = -\frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$$

$\boxed{\text{z369}}$ $$\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,2) = -\frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3}^{(s)}(A_u)}{3}$$

$\boxed{\text{z370}}$ $$\mathbb{Q}_{1,1}^{(1,1;c)}(T_u) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$$

$\boxed{\text{z371}}$ $$\mathbb{Q}_{1,2}^{(1,1;c)}(T_u) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}$$

$\boxed{\text{z372}}$ $$\mathbb{Q}_{1,3}^{(1,1;c)}(T_u) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

$\boxed{\text{z373}}$ $$\mathbb{G}_{2,1}^{(c)}(T_u) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6}$$

$\boxed{\text{z374}}$ $$\mathbb{G}_{2,2}^{(c)}(T_u) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

$\boxed{\text{z375}}$ $$\mathbb{G}_{2,3}^{(c)}(T_u) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

$\boxed{\text{z376}}$ $$\mathbb{G}_{2,1}^{(1,-1;c)}(T_u) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6}$$

$\boxed{\text{z377}}$ $$\mathbb{G}_{2,2}^{(1,-1;c)}(T_u) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

$\boxed{\text{z378}}$ $$\mathbb{G}_{2,3}^{(1,-1;c)}(T_u) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

$\boxed{\text{z379}}$ $$\mathbb{G}_{2,1}^{(1,0;c)}(T_u) = \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6}$$

$\boxed{\text{z380}}$ $$\mathbb{G}_{2,2}^{(1,0;c)}(T_u) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

$\boxed{\text{z381}}$ $$\mathbb{G}_{2,3}^{(1,0;c)}(T_u) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{6}$$

- 'A'-'A' bond-cluster
  - bra: $\langle \frac{1}{2}, \frac{1}{2}; p|$, $\langle \frac{1}{2}, -\frac{1}{2}; p|$, $\langle \frac{3}{2}, \frac{3}{2}; p|$, $\langle \frac{3}{2}, \frac{1}{2}; p|$, $\langle \frac{3}{2}, -\frac{1}{2}; p|$, $\langle \frac{3}{2}, -\frac{3}{2}; p|$
  - ket: $|\frac{1}{2}, \frac{1}{2}; p\rangle$, $|\frac{1}{2}, -\frac{1}{2}; p\rangle$, $|\frac{3}{2}, \frac{3}{2}; p\rangle$, $|\frac{3}{2}, \frac{1}{2}; p\rangle$, $|\frac{3}{2}, -\frac{1}{2}; p\rangle$, $|\frac{3}{2}, -\frac{3}{2}; p\rangle$
  - wyckoff: `12b@12c`

$$\boxed{\text{z6}}\quad \mathbb{Q}_{0}^{(c)}(A_g, a) = \mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{0}^{(b)}(A_g)$$

$$\boxed{\text{z7}}\quad \mathbb{Q}_{0}^{(c)}(A_g, b) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{5}$$

$$\boxed{\text{z8}}\quad \mathbb{Q}_{0}^{(c)}(A_g, c) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z9}}\quad \mathbb{Q}_{4}^{(c)}(A_g) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} - \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \frac{\sqrt{30}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15}$$

$$\boxed{\text{z10}}\quad \mathbb{Q}_{0}^{(1,-1;c)}(A_g, a) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{5} + \frac{\sqrt{5}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{5}$$

$$\boxed{\text{z11}}\quad \mathbb{Q}_{0}^{(1,-1;c)}(A_g, b) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z12}}\quad \mathbb{Q}_{4}^{(1,-1;c)}(A_g, a) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} - \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15}$$

$$\boxed{\text{z13}}\quad \mathbb{Q}_{4}^{(1,-1;c)}(A_g, b) = \frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g, 1)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g, 1)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g, 1)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z14}}\quad \mathbb{Q}_{4}^{(1,-1;c)}(A_g, c) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z15}}\quad \mathbb{Q}_{0}^{(1,0;c)}(A_g) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z16}}\quad \mathbb{Q}_{0}^{(1,1;c)}(A_g, a) = \mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{0}^{(b)}(A_g)$$

$$\boxed{\text{z17}}\quad \mathbb{Q}_{0}^{(1,1;c)}(A_g, b) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z18}}\quad \mathbb{G}_{3}^{(c)}(A_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$$

$$\boxed{\text{z19}}\quad \mathbb{G}_3^{(c)}(A_g, b) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z20}}\quad \mathbb{G}_3^{(1,-1;c)}(A_g, a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$$

$$\boxed{\text{z21}}\quad \mathbb{G}_3^{(1,-1;c)}(A_g, b) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z22}}\quad \mathbb{G}_3^{(1,-1;c)}(A_g, c) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z23}}\quad \mathbb{G}_3^{(1,-1;c)}(A_g, d) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z24}}\quad \mathbb{G}_3^{(1,0;c)}(A_g, a) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z25}}\quad \mathbb{G}_3^{(1,0;c)}(A_g, b) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z26}}\quad \mathbb{G}_3^{(1,1;c)}(A_g) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z37}}\quad \mathbb{Q}_3^{(c)}(A_u, a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z38}}\quad \mathbb{Q}_3^{(c)}(A_u, b) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

$$\boxed{\text{z39}}\quad \mathbb{Q}_3^{(1,-1;c)}(A_u, a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z40}}\quad \mathbb{Q}_3^{(1,-1;c)}(A_u, b) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

$$\boxed{\text{z41}}\quad \mathbb{Q}_3^{(1,-1;c)}(A_u, c) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} - \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z42}}\quad \mathbb{Q}_3^{(1,0;c)}(A_u, a) = \frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2} - \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2}$$

$\boxed{\text{z43}}$ $\mathbb{Q}_{3}^{(1,0;c)}(A_u,b)=\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z44}}$ $\mathbb{G}_{0}^{(c)}(A_u)=\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z45}}$ $\mathbb{G}_{0}^{(1,-1;c)}(A_u,a)=\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{3}^{(b)}(A_u)$

$\boxed{\text{z46}}$ $\mathbb{G}_{0}^{(1,-1;c)}(A_u,b)=\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z47}}$ $\mathbb{G}_{4}^{(1,-1;c)}(A_u)=\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z48}}$ $\mathbb{G}_{0}^{(1,0;c)}(A_u,a)=\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z49}}$ $\mathbb{G}_{0}^{(1,0;c)}(A_u,b)=\frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2}+\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z50}}$ $\mathbb{G}_{4}^{(1,0;c)}(A_u)=\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3}+\frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z51}}$ $\mathbb{G}_{0}^{(1,1;c)}(A_u)=\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}+\frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z52}}$ $\mathbb{Q}_{2,1}^{(c)}(E_g,a)=\frac{\sqrt{2}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$

$\boxed{\text{z53}}$ $\mathbb{Q}_{2,2}^{(c)}(E_g,a)=\frac{\sqrt{2}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2}$

$\boxed{\text{z54}}$ $\mathbb{Q}_{2,1}^{(c)}(E_g,b)=\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{0}^{(b)}(A_g)}{2}$

$\boxed{\text{z55}}$ $\mathbb{Q}_{2,2}^{(c)}(E_g,b)=\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{0}^{(b)}(A_g)}{2}$

$\boxed{\text{z56}}$ $\mathbb{Q}_{2,1}^{(c)}(E_g,c)=\frac{\sqrt{7}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{7}+\frac{\sqrt{7}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14}-\frac{\sqrt{7}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{7}+\frac{\sqrt{7}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}-\frac{\sqrt{7}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{7}$

$\boxed{\text{z57}}$ $$\mathbb{Q}_{2,2}^{(c)}(E_g,c) = -\frac{\sqrt{7}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{7} - \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{7} + \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}$$

$\boxed{\text{z58}}$ $$\mathbb{Q}_{2,1}^{(c)}(E_g,d) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$\boxed{\text{z59}}$ $$\mathbb{Q}_{2,2}^{(c)}(E_g,d) = \frac{\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{2}$$

$\boxed{\text{z60}}$ $$\mathbb{Q}_{2,1}^{(c)}(E_g,e) = \frac{\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{2}$$

$\boxed{\text{z61}}$ $$\mathbb{Q}_{2,2}^{(c)}(E_g,e) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$\boxed{\text{z62}}$ $$\mathbb{Q}_{4,1}^{(c)}(E_g) = \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14} - \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21} + \frac{2\sqrt{21}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21}$$

$\boxed{\text{z63}}$ $$\mathbb{Q}_{4,2}^{(c)}(E_g) = -\frac{\sqrt{21}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} + \frac{\sqrt{7}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{7} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{7}$$

$\boxed{\text{z64}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{0}^{(b)}(A_g)}{2}$$

$\boxed{\text{z65}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{0}^{(b)}(A_g)}{2}$$

$\boxed{\text{z66}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,b) = \frac{\sqrt{7}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{7} + \frac{\sqrt{7}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{7} + \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{7}$$

$\boxed{\text{z67}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,b) = -\frac{\sqrt{7}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{7} - \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{7} + \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}$$

$\boxed{\text{z68}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,c) = -\frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} - \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} - \frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} + \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{14}$$

$\boxed{\text{z69}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,c) = \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{84} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{84}$$
$$+ \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{42}$$

$$\boxed{\text{z70}}\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,d) = -\frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} - \frac{\sqrt{10}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} + \frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} - \frac{\sqrt{10}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{10}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z71}}\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,d) = -\frac{\sqrt{2}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} + \frac{\sqrt{30}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} - \frac{\sqrt{2}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} - \frac{\sqrt{30}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z72}}\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,e) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z73}}\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,e) = \frac{\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{2}$$

$$\boxed{\text{z74}}\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,f) = \frac{\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{2}$$

$$\boxed{\text{z75}}\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,f) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z76}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(E_g,a) = \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14} - \frac{\sqrt{21}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21} + \frac{2\sqrt{21}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21}$$

$$\boxed{\text{z77}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(E_g,a) = -\frac{\sqrt{21}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} + \frac{\sqrt{7}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{7} - \frac{\sqrt{21}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14} - \frac{\sqrt{7}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{7}$$

$$\boxed{\text{z78}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(E_g,b) = -\frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{84} + \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{84} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} + \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{42}$$

$$\boxed{\text{z124}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(E_g,b) = \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{28} - \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} - \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{14}$$

$$\boxed{\text{z125}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(E_g,c) = -\frac{\sqrt{30}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} + \frac{\sqrt{30}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} - \frac{\sqrt{2}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z126}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(E_g,c) = -\frac{\sqrt{10}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} - \frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{12} - \frac{\sqrt{10}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{10}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z127}}\quad \mathbb{Q}_{2,1}^{(1,0;c)}(E_g,a) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{2} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{2}$$

$\boxed{\text{z128}}$ $\mathbb{Q}_{2,2}^{(1,0;c)}(E_g, a) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z129}}$ $\mathbb{Q}_{2,1}^{(1,0;c)}(E_g, b) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{2} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{2}$

$\boxed{\text{z130}}$ $\mathbb{Q}_{2,2}^{(1,0;c)}(E_g, b) = -\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z131}}$ $\mathbb{Q}_{2,1}^{(1,0;c)}(E_g, c) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z132}}$ $\mathbb{Q}_{2,2}^{(1,0;c)}(E_g, c) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{2} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{2}$

$\boxed{\text{z133}}$ $\mathbb{Q}_{2,1}^{(1,1;c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$

$\boxed{\text{z134}}$ $\mathbb{Q}_{2,2}^{(1,1;c)}(E_g, a) = \frac{\sqrt{2}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2}$

$\boxed{\text{z135}}$ $\mathbb{Q}_{2,1}^{(1,1;c)}(E_g, b) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z136}}$ $\mathbb{Q}_{2,2}^{(1,1;c)}(E_g, b) = \frac{\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{2}$

$\boxed{\text{z137}}$ $\mathbb{Q}_{2,1}^{(1,1;c)}(E_g, c) = \frac{\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{2} - \frac{\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{2}$

$\boxed{\text{z138}}$ $\mathbb{Q}_{2,2}^{(1,1;c)}(E_g, c) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z139}}$ $\mathbb{Q}_{5,1}^{(c)}(E_u) = \frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{2} - \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{2}$

$\boxed{\text{z140}}$ $\mathbb{Q}_{5,2}^{(c)}(E_u) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{3}$

$\boxed{\text{z141}}$ $\mathbb{Q}_{5,1}^{(1,-1;c)}(E_u, a) = \frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{2} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{2}$

$\boxed{\text{z142}}$ $\mathbb{Q}_{5,2}^{(1,-1;c)}(E_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z143}}$ $\mathbb{Q}_{5,1}^{(1,-1;c)}(E_u,b) = \frac{\sqrt{2}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z144}}$ $\mathbb{Q}_{5,2}^{(1,-1;c)}(E_u,b) = -\frac{\sqrt{2}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2}$

$\boxed{\text{z145}}$ $\mathbb{Q}_{5,1}^{(1,0;c)}(E_u) = \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{3}^{(b)}(A_u)}{2}$

$\boxed{\text{z146}}$ $\mathbb{Q}_{5,2}^{(1,0;c)}(E_u) = -\frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{3}^{(b)}(A_u)}{2}$

$\boxed{\text{z147}}$ $\mathbb{G}_{2,1}^{(c)}(E_u,a) = -\frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{2} + \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z148}}$ $\mathbb{G}_{2,2}^{(c)}(E_u,a) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z149}}$ $\mathbb{G}_{2,1}^{(c)}(E_u,b) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z150}}$ $\mathbb{G}_{2,2}^{(c)}(E_u,b) = \frac{\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{2} - \frac{\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z151}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(E_u,a) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{2} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z152}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(E_u,a) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z153}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(E_u,b) = -\frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} - \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} - \frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} + \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{14}$

$\boxed{\text{z154}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(E_u,b) = \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{84} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{84} + \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{42}$

$\boxed{\text{z155}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(E_u,c) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z156}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(E_u,c) = \frac{\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{2} - \frac{\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z157}}$ $\mathbb{G}_{4,1}^{(1,-1;c)}(E_u) = -\frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{84} + \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{84} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} + \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{42}$

$\boxed{\text{z158}}$ $\mathbb{G}_{4,2}^{(1,-1;c)}(E_u) = \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} - \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} - \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{14}$

$\boxed{\text{z159}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(E_u,a) = -\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z160}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(E_u,a) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{2} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z161}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(E_u,b) = -\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6} - \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z162}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(E_u,b) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{2} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{2}$

$\boxed{\text{z163}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(E_u,c) = \frac{\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z164}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(E_u,c) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2}$

$\boxed{\text{z165}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(E_u,d) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{2} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z166}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(E_u,d) = -\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z167}}$ $\mathbb{G}_{2,1}^{(1,1;c)}(E_u) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$

$\boxed{\text{z168}}$ $\mathbb{G}_{2,2}^{(1,1;c)}(E_u) = \frac{\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{2} - \frac{\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{2}$

$\boxed{\text{z169}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3}$

$\boxed{\text{z170}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3}$

$\boxed{\text{z171}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z172}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$

$\boxed{\text{z173}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,b) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$

$\boxed{\text{z174}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,b) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$

$\boxed{\text{z175}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,c) = \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{42} + \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{42} - \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} - \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}$

$\boxed{\text{z176}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,c) = \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{42} + \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14} + \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{42} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14}$

$\boxed{\text{z177}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,c) = -\frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21} + \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} - \frac{\sqrt{42}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{21}$

$\boxed{\text{z178}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$

$\boxed{\text{z179}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$

$\boxed{\text{z180}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$

$\boxed{\text{z181}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,e) = -\frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$

$\boxed{\text{z182}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,e) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$

$\boxed{\text{z183}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,e) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$

$$\boxed{\text{z184}}\quad \mathbb{Q}_{4,1}^{(c)}(T_g,1) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{4} - \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{12} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{12}$$

$$\boxed{\text{z185}}\quad \mathbb{Q}_{4,2}^{(c)}(T_g,1) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{12}$$

$$\boxed{\text{z186}}\quad \mathbb{Q}_{4,3}^{(c)}(T_g,1) = \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6}$$

$$\boxed{\text{z187}}\quad \mathbb{Q}_{4,1}^{(c)}(T_g,2) = -\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{28} - \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{28} + \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{28} + \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{28} + \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21} + \frac{\sqrt{42}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21}$$

$$\boxed{\text{z188}}\quad \mathbb{Q}_{4,2}^{(c)}(T_g,2) = -\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{28} + \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21} - \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{28} - \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{28} - \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{28} + \frac{\sqrt{42}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21}$$

$$\boxed{\text{z189}}\quad \mathbb{Q}_{4,3}^{(c)}(T_g,2) = \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14} + \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21} + \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21} + \frac{\sqrt{14}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14}$$

$$\boxed{\text{z190}}\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$$\boxed{\text{z191}}\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$$\boxed{\text{z192}}\quad \mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$$\boxed{\text{z193}}\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,b) = \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{42} + \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{42} - \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14}$$
$$- \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}$$

$$\boxed{\text{z194}}\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,b) = \frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{42} + \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14}$$
$$+ \frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{42} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14}$$

$$\boxed{\text{z195}}\quad \mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,b) = -\frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21} + \frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{14} + \frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14} - \frac{\sqrt{42}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{21}$$

$\boxed{\text{z196}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,c) = -\frac{\sqrt{21}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{21} - \frac{\sqrt{21}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{21} - \frac{\sqrt{35}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{21}$$

$\boxed{\text{z197}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,c) = -\frac{\sqrt{21}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{21} - \frac{\sqrt{35}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{21} - \frac{\sqrt{21}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{21}$$

$\boxed{\text{z198}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,c) = -\frac{\sqrt{21}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{21} - \frac{\sqrt{21}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{21} - \frac{\sqrt{35}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{21} + \frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{21}$$

$\boxed{\text{z199}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,d) = -\frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z200}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z201}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,d) = -\frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z202}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,e) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z203}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,e) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z204}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,e) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z205}}$ $$\mathbb{Q}_{2,1}^{(1,-1;c)}(T_g,f) = -\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z206}}$ $$\mathbb{Q}_{2,2}^{(1,-1;c)}(T_g,f) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z207}}$ $$\mathbb{Q}_{2,3}^{(1,-1;c)}(T_g,f) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z208}}$ $$\mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,1a) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{4} - \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{12} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{12}$$

$\boxed{\text{z209}}$ $$\mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,1a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{12}$$

$$\boxed{\text{z210}}\quad \mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,1a)=\frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6}+\frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6}$$

$$\boxed{\text{z211}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,1b)=\frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{4}-\frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{4}$$

$$\boxed{\text{z212}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,1b)=-\frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{4}+\frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{4}$$

$$\boxed{\text{z213}}\quad \mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,1b)=\frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{4}-\frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{12}-\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{4}$$

$$\boxed{\text{z214}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,1c)=-\frac{\sqrt{5}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{8}+\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{8}-\frac{\sqrt{5}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z215}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,1c)=-\frac{\sqrt{5}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{8}-\frac{\sqrt{5}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{8}+\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z216}}\quad \mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,1c)=-\frac{\sqrt{5}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{8}+\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{8}-\frac{\sqrt{5}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{8}-\frac{\sqrt{3}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}$$

$$\begin{aligned}\boxed{\text{z217}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,2a)=&-\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{28}-\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{28}+\frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{28}\\&+\frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{28}+\frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21}+\frac{\sqrt{42}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21}\end{aligned}$$

$$\begin{aligned}\boxed{\text{z218}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,2a)=&-\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{28}+\frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{21}-\frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{28}\\&-\frac{\sqrt{14}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{28}-\frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{28}+\frac{\sqrt{42}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21}\end{aligned}$$

$$\boxed{\text{z219}}\quad \mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,2a)=\frac{\sqrt{14}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{14}+\frac{\sqrt{42}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{21}+\frac{\sqrt{42}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{21}+\frac{\sqrt{14}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{14}$$

$$\boxed{\text{z220}}\quad \mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,2b)=-\frac{\sqrt{105}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{84}-\frac{3\sqrt{7}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{28}-\frac{\sqrt{105}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{84}+\frac{3\sqrt{7}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28}+\frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{7}$$

$$\boxed{\text{z221}}\quad \mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,2b)=-\frac{\sqrt{105}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{84}+\frac{3\sqrt{7}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{28}-\frac{\sqrt{105}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{84}-\frac{3\sqrt{7}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{28}+\frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{7}$$

$\boxed{\text{z222}}$ $$\mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,2b)=-\frac{\sqrt{105}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{84}-\frac{3\sqrt{7}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28}-\frac{\sqrt{105}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{84}+\frac{3\sqrt{7}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{28}+\frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{7}$$

$\boxed{\text{z223}}$ $$\mathbb{Q}_{4,1}^{(1,-1;c)}(T_g,2c)=-\frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}-\frac{\sqrt{6}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z224}}$ $$\mathbb{Q}_{4,2}^{(1,-1;c)}(T_g,2c)=-\frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{6}-\frac{\sqrt{6}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z225}}$ $$\mathbb{Q}_{4,3}^{(1,-1;c)}(T_g,2c)=-\frac{\sqrt{6}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}-\frac{\sqrt{6}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z226}}$ $$\mathbb{Q}_{2,1}^{(1,0;c)}(T_g,a)=-\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6}-\frac{\sqrt{2}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6}-\frac{\sqrt{2}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z227}}$ $$\mathbb{Q}_{2,2}^{(1,0;c)}(T_g,a)=\frac{\sqrt{2}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6}+\frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6}-\frac{\sqrt{2}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6}-\frac{\sqrt{2}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z228}}$ $$\mathbb{Q}_{2,3}^{(1,0;c)}(T_g,a)=-\frac{\sqrt{2}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{3}$$

$\boxed{\text{z229}}$ $$\mathbb{Q}_{2,1}^{(1,0;c)}(T_g,b)=\frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}-\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z230}}$ $$\mathbb{Q}_{2,2}^{(1,0;c)}(T_g,b)=-\frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6}+\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}-\frac{\sqrt{2}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z231}}$ $$\mathbb{Q}_{2,3}^{(1,0;c)}(T_g,b)=-\frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}-\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}+\frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z232}}$ $$\mathbb{Q}_{2,1}^{(1,0;c)}(T_g,c)=\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{30}-\frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{10}$$

$\boxed{\text{z233}}$ $$\mathbb{Q}_{2,2}^{(1,0;c)}(T_g,c)=\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{30}+\frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{10}$$

$\boxed{\text{z234}}$ $$\mathbb{Q}_{2,3}^{(1,0;c)}(T_g,c)=-\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{15}+\frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{10}$$

$\boxed{\text{z235}}$ $$\mathbb{Q}_{4,1}^{(1,0;c)}(T_g,1)=-\frac{\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{2}-\frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z236}}$ $$\mathbb{Q}_{4,2}^{(1,0;c)}(T_g,1) = \frac{\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{2} - \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z237}}$ $$\mathbb{Q}_{4,3}^{(1,0;c)}(T_g,1) = \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$$

$\boxed{\text{z238}}$ $$\mathbb{Q}_{4,1}^{(1,0;c)}(T_g,2) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{15} + \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{15}$$

$\boxed{\text{z239}}$ $$\mathbb{Q}_{4,2}^{(1,0;c)}(T_g,2) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{15}$$

$\boxed{\text{z240}}$ $$\mathbb{Q}_{4,3}^{(1,0;c)}(T_g,2) = \frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{5} + \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{15} + \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{15}$$

$\boxed{\text{z241}}$ $$\mathbb{Q}_{2,1}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3}$$

$\boxed{\text{z242}}$ $$\mathbb{Q}_{2,2}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3}$$

$\boxed{\text{z243}}$ $$\mathbb{Q}_{2,3}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$$

$\boxed{\text{z244}}$ $$\mathbb{Q}_{2,1}^{(1,1;c)}(T_g,b) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z245}}$ $$\mathbb{Q}_{2,2}^{(1,1;c)}(T_g,b) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z246}}$ $$\mathbb{Q}_{2,3}^{(1,1;c)}(T_g,b) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z247}}$ $$\mathbb{Q}_{2,1}^{(1,1;c)}(T_g,c) = -\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z248}}$ $$\mathbb{Q}_{2,2}^{(1,1;c)}(T_g,c) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z249}}$ $$\mathbb{Q}_{2,3}^{(1,1;c)}(T_g,c) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z250}}$ $\mathbb{G}^{(c)}_{1,1}(T_g,a) = -\frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{10} + \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{10} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{30} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{30} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{30} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{30}$

$\boxed{\text{z251}}$ $\mathbb{G}^{(c)}_{1,2}(T_g,a) = \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{10} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{30} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{30} - \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{10} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{30} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{30}$

$\boxed{\text{z252}}$ $\mathbb{G}^{(c)}_{1,3}(T_g,a) = -\frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{30} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{30} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{15}$

$\boxed{\text{z253}}$ $\mathbb{G}^{(c)}_{1,1}(T_g,b) = \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,2}(T_g)\mathbb{M}^{(b)}_{1,3}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,3}(T_g)\mathbb{M}^{(b)}_{1,2}(T_g)}{6}$

$\boxed{\text{z254}}$ $\mathbb{G}^{(c)}_{1,2}(T_g,b) = -\frac{\sqrt{6}\mathbb{M}^{(a)}_{1,1}(T_g)\mathbb{M}^{(b)}_{1,3}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,3}(T_g)\mathbb{M}^{(b)}_{1,1}(T_g)}{6}$

$\boxed{\text{z255}}$ $\mathbb{G}^{(c)}_{1,3}(T_g,b) = \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,1}(T_g)\mathbb{M}^{(b)}_{1,2}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,2}(T_g)\mathbb{M}^{(b)}_{1,1}(T_g)}{6}$

$\boxed{\text{z256}}$ $\mathbb{G}^{(c)}_{1,1}(T_g,c) = \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,2}(T_g)\mathbb{T}^{(b)}_{2,3}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,3}(T_g)\mathbb{T}^{(b)}_{2,2}(T_g)}{6}$

$\boxed{\text{z257}}$ $\mathbb{G}^{(c)}_{1,2}(T_g,c) = \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,1}(T_g)\mathbb{T}^{(b)}_{2,3}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,3}(T_g)\mathbb{T}^{(b)}_{2,1}(T_g)}{6}$

$\boxed{\text{z258}}$ $\mathbb{G}^{(c)}_{1,3}(T_g,c) = \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,1}(T_g)\mathbb{T}^{(b)}_{2,2}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}^{(a)}_{1,2}(T_g)\mathbb{T}^{(b)}_{2,1}(T_g)}{6}$

$\boxed{\text{z259}}$ $\mathbb{G}^{(c)}_{3,1}(T_g,1) = \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{20} - \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{20} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{60} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{60} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{15}$

$\boxed{\text{z260}}$ $\mathbb{G}^{(c)}_{3,2}(T_g,1) = -\frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{20} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{60} + \frac{\sqrt{10}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{20} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{60} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{15}$

$\boxed{\text{z261}}$ $\mathbb{G}^{(c)}_{3,3}(T_g,1) = -\frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{15} - \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,3}(T_g)}{30} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}^{(a)}_{2,3}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{30}$

$\boxed{\text{z262}}$ $\mathbb{G}^{(c)}_{3,1}(T_g,2) = \frac{\sqrt{6}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{12} - \frac{\sqrt{6}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{12} + \frac{\sqrt{2}\mathbb{Q}^{(a)}_{2,1}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{4} - \frac{\sqrt{2}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,1}(T_g)}{4}$

$\boxed{\text{z263}}$ $\mathbb{G}^{(c)}_{3,2}(T_g,2) = \frac{\sqrt{6}\mathbb{Q}^{(a)}_{2,1}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{12} + \frac{\sqrt{2}\mathbb{Q}^{(a)}_{2,2}(E_g)\mathbb{Q}^{(b)}_{2,2}(T_g)}{4} - \frac{\sqrt{6}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,1}(E_g)}{12} - \frac{\sqrt{2}\mathbb{Q}^{(a)}_{2,2}(T_g)\mathbb{Q}^{(b)}_{2,2}(E_g)}{4}$

$\boxed{\text{z264}}$ $$\mathbb{G}_{3,3}^{(c)}(T_g,2)=-\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6}+\frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6}$$

$\boxed{\text{z265}}$ $$\mathbb{G}_{1,1}^{(1,-1;c)}(T_g,a)=-\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{10}+\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10}+\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{30}-\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{30}-\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{30}+\frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{30}$$

$\boxed{\text{z266}}$ $$\mathbb{G}_{1,2}^{(1,-1;c)}(T_g,a)=\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{10}+\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{30}-\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{30}-\frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10}+\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{30}-\frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{30}$$

$\boxed{\text{z267}}$ $$\mathbb{G}_{1,3}^{(1,-1;c)}(T_g,a)=-\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{30}+\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15}+\frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{30}-\frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{15}$$

$\boxed{\text{z268}}$ $$\mathbb{G}_{1,1}^{(1,-1;c)}(T_g,b)=-\frac{21\sqrt{79}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{632}-\frac{13\sqrt{1185}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{1896}-\frac{21\sqrt{79}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{632}+\frac{13\sqrt{1185}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{1896}+\frac{\sqrt{1185}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{158}$$

$\boxed{\text{z269}}$ $$\mathbb{G}_{1,2}^{(1,-1;c)}(T_g,b)=-\frac{21\sqrt{79}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{632}+\frac{13\sqrt{1185}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{1896}-\frac{21\sqrt{79}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{632}-\frac{13\sqrt{1185}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{1896}+\frac{\sqrt{1185}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{158}$$

$\boxed{\text{z270}}$ $$\mathbb{G}_{1,3}^{(1,-1;c)}(T_g,b)=-\frac{21\sqrt{79}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{632}-\frac{13\sqrt{1185}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{1896}-\frac{21\sqrt{79}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{632}+\frac{13\sqrt{1185}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{1896}+\frac{\sqrt{1185}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{158}$$

$\boxed{\text{z271}}$ $$\mathbb{G}_{1,1}^{(1,-1;c)}(T_g,c)=\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6}-\frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z272}}$ $$\mathbb{G}_{1,2}^{(1,-1;c)}(T_g,c)=-\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6}+\frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z273}}$ $$\mathbb{G}_{1,3}^{(1,-1;c)}(T_g,c)=\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}-\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z274}}\quad \mathbb{G}_{1,1}^{(1,-1;c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z275}}\quad \mathbb{G}_{1,2}^{(1,-1;c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z276}}\quad \mathbb{G}_{1,3}^{(1,-1;c)}(T_g,d) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$$\boxed{\text{z282}}\quad \mathbb{G}_{3,1}^{(1,-1;c)}(T_g,1a) = \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{20} - \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{20} - \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{60}$$
$$+ \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{60} - \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15}$$

$$\boxed{\text{z283}}\quad \mathbb{G}_{3,2}^{(1,-1;c)}(T_g,1a) = -\frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{20} + \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{60}$$
$$+ \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{20} - \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{60} - \frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15}$$

$$\boxed{\text{z284}}\quad \mathbb{G}_{3,3}^{(1,-1;c)}(T_g,1a) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{30} + \frac{\sqrt{30}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \frac{\sqrt{30}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{30}$$

$$\boxed{\text{z285}}\quad \mathbb{G}_{3,1}^{(1,-1;c)}(T_g,1b) = -\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{12}$$

$$\boxed{\text{z286}}\quad \mathbb{G}_{3,2}^{(1,-1;c)}(T_g,1b) = \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} - \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{12}$$

$$\boxed{\text{z287}}\quad \mathbb{G}_{3,3}^{(1,-1;c)}(T_g,1b) = -\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{12}$$

$$\boxed{\text{z288}}\quad \mathbb{G}_{3,1}^{(1,-1;c)}(T_g,1c) = \frac{\sqrt{1185}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{948} - \frac{9\sqrt{79}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{316} + \frac{\sqrt{1185}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{948} + \frac{9\sqrt{79}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{316} - \frac{4\sqrt{79}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{79}$$

$$\boxed{\text{z289}}\quad \mathbb{G}_{3,2}^{(1,-1;c)}(T_g,1c) = \frac{\sqrt{1185}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,3}^{(b)}(T_g)}{948} + \frac{9\sqrt{79}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{316} + \frac{\sqrt{1185}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{948} - \frac{9\sqrt{79}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{316} - \frac{4\sqrt{79}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{79}$$

$$\boxed{\text{z290}}\quad \mathbb{G}_{3,3}^{(1,-1;c)}(T_g,1c) = \frac{\sqrt{1185}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,2}^{(b)}(T_g)}{948} - \frac{9\sqrt{79}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{316} + \frac{\sqrt{1185}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{2,1}^{(b)}(T_g)}{948} + \frac{9\sqrt{79}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{316} - \frac{4\sqrt{79}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{79}$$

$\boxed{\text{z291}}$ $$\mathbb{G}_{3,1}^{(1,-1;c)}(T_g,2a) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{12} - \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{12} + \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{4} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{4}$$

$\boxed{\text{z292}}$ $$\mathbb{G}_{3,2}^{(1,-1;c)}(T_g,2a) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{12} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{4} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{12} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{4}$$

$\boxed{\text{z293}}$ $$\mathbb{G}_{3,3}^{(1,-1;c)}(T_g,2a) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6}$$

$\boxed{\text{z294}}$ $$\mathbb{G}_{3,1}^{(1,-1;c)}(T_g,2b) = \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{12} - \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3}$$

$\boxed{\text{z295}}$ $$\mathbb{G}_{3,2}^{(1,-1;c)}(T_g,2b) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} - \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3}$$

$\boxed{\text{z296}}$ $$\mathbb{G}_{3,3}^{(1,-1;c)}(T_g,2b) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{12} - \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,1}^{(b)}(T_g)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$\boxed{\text{z307}}$ $$\mathbb{G}_{1,1}^{(1,0;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$\boxed{\text{z308}}$ $$\mathbb{G}_{1,2}^{(1,0;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$\boxed{\text{z309}}$ $$\mathbb{G}_{1,3}^{(1,0;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{0}^{(b)}(A_g)}{3}$$

$\boxed{\text{z310}}$ $$\mathbb{G}_{1,1}^{(1,0;c)}(T_g,b) = -\frac{\sqrt{30}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{30} + \frac{\sqrt{10}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} + \frac{\sqrt{10}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{10}$$

$\boxed{\text{z311}}$ $$\mathbb{G}_{1,2}^{(1,0;c)}(T_g,b) = \frac{\sqrt{10}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{10} - \frac{\sqrt{30}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{30} - \frac{\sqrt{10}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} + \frac{\sqrt{10}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{10}$$

$\boxed{\text{z312}}$ $$\mathbb{G}_{1,3}^{(1,0;c)}(T_g,b) = \frac{\sqrt{10}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{10} + \frac{\sqrt{30}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{15}$$

$\boxed{\text{z313}}$ $$\mathbb{G}_{1,1}^{(1,0;c)}(T_g,c) = -\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{30} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{10}$$

$\boxed{\text{z314}}$ $$\mathbb{G}_{1,2}^{(1,0;c)}(T_g,c) = -\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{30} + \frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{10} - \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{10}$$

$\boxed{\text{z315}}$ $\mathbb{G}_{1,3}^{(1,0;c)}(T_g,c) = \frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{15} + \frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{10}$

$\boxed{\text{z316}}$ $\mathbb{G}_{1,1}^{(1,0;c)}(T_g,d) = -\frac{\sqrt{6}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$

$\boxed{\text{z317}}$ $\mathbb{G}_{1,2}^{(1,0;c)}(T_g,d) = \frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$

$\boxed{\text{z318}}$ $\mathbb{G}_{1,3}^{(1,0;c)}(T_g,d) = -\frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$

$\boxed{\text{z319}}$ $\mathbb{G}_{3,1}^{(1,0;c)}(T_g,1a) = -\frac{\sqrt{5}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} + \frac{\sqrt{15}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \frac{\sqrt{15}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15}$

$\boxed{\text{z320}}$ $\mathbb{G}_{3,2}^{(1,0;c)}(T_g,1a) = -\frac{\sqrt{15}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15} - \frac{\sqrt{5}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} - \frac{\sqrt{15}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \frac{\sqrt{15}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15}$

$\boxed{\text{z321}}$ $\mathbb{G}_{3,3}^{(1,0;c)}(T_g,1a) = -\frac{\sqrt{15}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \frac{\sqrt{5}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{5}$

$\boxed{\text{z322}}$ $\mathbb{G}_{3,1}^{(1,0;c)}(T_g,1b) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{15}$

$\boxed{\text{z323}}$ $\mathbb{G}_{3,2}^{(1,0;c)}(T_g,1b) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{15}$

$\boxed{\text{z324}}$ $\mathbb{G}_{3,3}^{(1,0;c)}(T_g,1b) = \frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{5} - \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{15}$

$\boxed{\text{z325}}$ $\mathbb{G}_{3,1}^{(1,0;c)}(T_g,2a) = -\frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6} - \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6} + \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3} - \frac{\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3}$

$\boxed{\text{z326}}$ $\mathbb{G}_{3,2}^{(1,0;c)}(T_g,2a) = -\frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{6} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{6} + \frac{\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3}$

$\boxed{\text{z327}}$ $\mathbb{G}_{3,3}^{(1,0;c)}(T_g,2a) = \frac{\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3} - \frac{\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3} + \frac{\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{3}$

$\boxed{\text{z328}}$ $\mathbb{G}_{3,1}^{(1,0;c)}(T_g,2b) = -\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3} + \frac{\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3}$

$\boxed{\text{z329}}$ $$\mathbb{G}_{3,2}^{(1,0;c)}(T_g, 2b) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} + \frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} - \frac{\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3}$$

$\boxed{\text{z330}}$ $$\mathbb{G}_{3,3}^{(1,0;c)}(T_g, 2b) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3}$$

$\boxed{\text{z331}}$ $$\mathbb{G}_{1,1}^{(1,1;c)}(T_g, a) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z332}}$ $$\mathbb{G}_{1,2}^{(1,1;c)}(T_g, a) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z333}}$ $$\mathbb{G}_{1,3}^{(1,1;c)}(T_g, a) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z334}}$ $$\mathbb{G}_{1,1}^{(1,1;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6}$$

$\boxed{\text{z335}}$ $$\mathbb{G}_{1,2}^{(1,1;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z336}}$ $$\mathbb{G}_{1,3}^{(1,1;c)}(T_g, b) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{6}$$

$\boxed{\text{z382}}$ $$\mathbb{Q}_{1,1}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z383}}$ $$\mathbb{Q}_{1,2}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3}$$

$\boxed{\text{z384}}$ $$\mathbb{Q}_{1,3}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$$

$\boxed{\text{z385}}$ $$\mathbb{Q}_{1,1}^{(c)}(T_u, b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10}$$

$\boxed{\text{z386}}$ $$\mathbb{Q}_{1,2}^{(c)}(T_u, b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10}$$

$\boxed{\text{z387}}$ $$\mathbb{Q}_{1,3}^{(c)}(T_u, b) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10}$$

$\boxed{\text{z388}}$ $$\mathbb{Q}_{1,1}^{(c)}(T_u,c) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{15}$$

$\boxed{\text{z389}}$ $$\mathbb{Q}_{1,2}^{(c)}(T_u,c) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{15}$$

$\boxed{\text{z390}}$ $$\mathbb{Q}_{1,3}^{(c)}(T_u,c) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{15}$$

$\boxed{\text{z391}}$ $$\mathbb{Q}_{1,1}^{(c)}(T_u,d) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} + \frac{\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z392}}$ $$\mathbb{Q}_{1,2}^{(c)}(T_u,d) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} - \frac{\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z393}}$ $$\mathbb{Q}_{1,3}^{(c)}(T_u,d) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{3}$$

$\boxed{\text{z394}}$ $$\mathbb{Q}_{1,1}^{(c)}(T_u,e) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$$

$\boxed{\text{z395}}$ $$\mathbb{Q}_{1,2}^{(c)}(T_u,e) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z396}}$ $$\mathbb{Q}_{1,3}^{(c)}(T_u,e) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z397}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,1a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z398}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,1a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z399}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,1a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(a)}(A_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z400}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,1b) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{15}$$

$\boxed{\text{z401}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,1b) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{15}$$

$\boxed{\text{z402}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,1b) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{15}$$

$\boxed{\text{z403}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,1c) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10}$$

$\boxed{\text{z404}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,1c) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10}$$

$\boxed{\text{z405}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,1c) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10}$$

$\boxed{\text{z406}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,2a) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3}$$

$\boxed{\text{z407}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,2a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} - \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z408}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,2a) = -\frac{\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z409}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,2b) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{9} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{18} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{18}$$

$\boxed{\text{z410}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,2b) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3} + \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{18} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{9} - \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{18}$$

$\boxed{\text{z411}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,2b) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{18} - \frac{2\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{9} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{18}$$

$\boxed{\text{z412}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z413}}$ $$\mathbb{Q}_{3,2}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z414}}$ $$\mathbb{Q}_{3,3}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z415}}$ $$\mathbb{Q}_{3,1}^{(c)}(T_u,2d) = -\frac{\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z416}}$ $\mathbb{Q}_{3,2}^{(c)}(T_u, 2d) = \frac{\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$

$\boxed{\text{z417}}$ $\mathbb{Q}_{3,3}^{(c)}(T_u, 2d) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{3}$

$\boxed{\text{z418}}$ $\mathbb{Q}_{5,1}^{(c)}(T_u, 3) = \frac{\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{18} + \frac{2\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{9} - \frac{2\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{9}$

$\boxed{\text{z419}}$ $\mathbb{Q}_{5,2}^{(c)}(T_u, 3) = -\frac{\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{6} - \frac{2\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{9} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{18} + \frac{2\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{9}$

$\boxed{\text{z420}}$ $\mathbb{Q}_{5,3}^{(c)}(T_u, 3) = \frac{2\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{9} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{9} - \frac{2\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{9}$

$\boxed{\text{z421}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u, a) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10}$

$\boxed{\text{z422}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u, a) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10}$

$\boxed{\text{z423}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u, a) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10}$

$\boxed{\text{z424}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u, b) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{15}$

$\boxed{\text{z425}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u, b) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{15}$

$\boxed{\text{z426}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u, b) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u, 1)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u, 1)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u, 1)}{15}$

$\boxed{\text{z427}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u, c) = \frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{3}^{(b)}(A_u)}{3}$

$\boxed{\text{z428}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u, c) = \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{3}^{(b)}(A_u)}{3}$

$\boxed{\text{z429}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u, c) = \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g, 2)\mathbb{T}_{3}^{(b)}(A_u)}{3}$

$\boxed{\text{z430}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,d) = -\frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} + \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{28} - \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{84}$

$\boxed{\text{z431}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,d) = -\frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{28} + \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} - \frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{84}$

$\boxed{\text{z432}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,d) = \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{14} + \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{42}$

$\boxed{\text{z433}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,e) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} + \frac{\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z434}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,e) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} - \frac{\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z435}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,e) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{3}$

$\boxed{\text{z436}}$ $\mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,f) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z437}}$ $\mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,f) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z438}}$ $\mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,f) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z439}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,1a) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{15}$

$\boxed{\text{z440}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,1a) = -\frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{15}$

$\boxed{\text{z441}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,1a) = \frac{\sqrt{5}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{5} - \frac{\sqrt{15}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{15}$

$\boxed{\text{z442}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,1b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10}$

$\boxed{\text{z443}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,1b) = -\frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{30} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{10} - \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10}$

$\boxed{\text{z444}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,1b) = \frac{\sqrt{30}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{15} + \frac{\sqrt{10}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{10} + \frac{\sqrt{10}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{10}$

$\boxed{\text{z445}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,1c) = -\frac{\sqrt{210}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{84} + \frac{\sqrt{70}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{28} + \frac{3\sqrt{14}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{28}$

$\boxed{\text{z446}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,1c) = -\frac{\sqrt{210}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{84} - \frac{\sqrt{70}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{28} - \frac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{28} + \frac{\sqrt{42}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{28}$

$\boxed{\text{z447}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,1c) = \frac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{42} - \frac{\sqrt{42}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{14}$

$\boxed{\text{z448}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,1d) = -\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12}$

$\boxed{\text{z449}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,1d) = \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12}$

$\boxed{\text{z450}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,1d) = -\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{4} - \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12}$

$\boxed{\text{z451}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2a) = -\frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3}$

$\boxed{\text{z452}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} - \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} - \frac{\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$

$\boxed{\text{z453}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2a) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$

$\boxed{\text{z454}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2b) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{9} - \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{18} + \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{18}$

$\boxed{\text{z455}}$ $\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2b) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3} + \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{18} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{9} - \frac{\sqrt{6}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{18}$

$\boxed{\text{z456}}$ $\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2b) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{18} - \frac{2\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{9} + \frac{\sqrt{6}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{18}$

$\boxed{\text{z457}}$ $\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{3}^{(b)}(A_u)}{3}$

$\boxed{\text{z458}}$ $$\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z459}}$ $$\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z460}}$ $$\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2d) = \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} + \frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z461}}$ $$\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2d) = -\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} + \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z462}}$ $$\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2d) = -\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{2,2}^{(b)}(E_u)}{3}$$

$\boxed{\text{z463}}$ $$\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z464}}$ $$\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}$$

$\boxed{\text{z465}}$ $$\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$\boxed{\text{z466}}$ $$\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z467}}$ $$\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z468}}$ $$\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z469}}$ $$\mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2g) = -\frac{\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z470}}$ $$\mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2g) = \frac{\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z471}}$ $$\mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2g) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{3}$$

$\boxed{\text{z472}}$ $$\mathbb{Q}_{5,1}^{(1,-1;c)}(T_u,3a) = \frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{18} + \frac{2\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{9} - \frac{2\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{9}$$

$\boxed{\text{z473}}$ $$\mathbb{Q}_{5,2}^{(1,-1;c)}(T_u,3a) = -\frac{\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6} - \frac{2\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{9} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{18} + \frac{2\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{9}$$

$\boxed{\text{z474}}$ $$\mathbb{Q}_{5,3}^{(1,-1;c)}(T_u,3a) = \frac{2\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{9} - \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{9} - \frac{2\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{9}$$

$\boxed{\text{z475}}$ $$\mathbb{Q}_{5,1}^{(1,-1;c)}(T_u,3b) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} + \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z476}}$ $$\mathbb{Q}_{5,2}^{(1,-1;c)}(T_u,3b) = -\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} - \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z477}}$ $$\mathbb{Q}_{5,3}^{(1,-1;c)}(T_u,3b) = \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{2,1}^{(b)}(E_u)}{3}$$

$\boxed{\text{z478}}$ $$\mathbb{Q}_{1,1}^{(1,0;c)}(T_u,a) = \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}$$

$\boxed{\text{z479}}$ $$\mathbb{Q}_{1,2}^{(1,0;c)}(T_u,a) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z480}}$ $$\mathbb{Q}_{1,3}^{(1,0;c)}(T_u,a) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z481}}$ $$\mathbb{Q}_{1,1}^{(1,0;c)}(T_u,b) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z482}}$ $$\mathbb{Q}_{1,2}^{(1,0;c)}(T_u,b) = \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z483}}$ $$\mathbb{Q}_{1,3}^{(1,0;c)}(T_u,b) = \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z484}}$ $$\mathbb{Q}_{1,1}^{(1,0;c)}(T_u,c) = \frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} + \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z485}}$ $$\mathbb{Q}_{1,2}^{(1,0;c)}(T_u,c) = -\frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} + \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z486}}$ $\mathbb{Q}_{1,3}^{(1,0;c)}(T_u,c) = -\frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{3}$

$\boxed{\text{z487}}$ $\mathbb{Q}_{1,1}^{(1,0;c)}(T_u,d) = -\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{10}$

$\boxed{\text{z488}}$ $\mathbb{Q}_{1,2}^{(1,0;c)}(T_u,d) = -\frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{30} + \frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{10} - \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{10}$

$\boxed{\text{z489}}$ $\mathbb{Q}_{1,3}^{(1,0;c)}(T_u,d) = \frac{\sqrt{30}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{15} + \frac{\sqrt{10}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{10} + \frac{\sqrt{10}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{10}$

$\boxed{\text{z490}}$ $\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,1a) = -\frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z491}}$ $\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,1a) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z492}}$ $\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,1a) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z493}}$ $\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,1b) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{10} + \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{15}$

$\boxed{\text{z494}}$ $\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,1b) = -\frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{10} - \frac{\sqrt{15}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{15}$

$\boxed{\text{z495}}$ $\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,1b) = \frac{\sqrt{5}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{5} - \frac{\sqrt{15}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{15} - \frac{\sqrt{15}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{15}$

$\boxed{\text{z496}}$ $\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,2a) = -\frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z497}}$ $\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,2a) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z498}}$ $\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,2a) = -\frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{6} - \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{6}$

$\boxed{\text{z499}}$ $\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,2b) = -\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} + \frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$

$\boxed{\text{z500}}$ $$\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,2b) = -\frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z501}}$ $$\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,2b) = \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{3}$$

$\boxed{\text{z502}}$ $$\mathbb{Q}_{3,1}^{(1,0;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}$$

$\boxed{\text{z503}}$ $$\mathbb{Q}_{3,2}^{(1,0;c)}(T_u,2c) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3} - \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z504}}$ $$\mathbb{Q}_{3,3}^{(1,0;c)}(T_u,2c) = -\frac{\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3} + \frac{\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z505}}$ $$\mathbb{Q}_{1,1}^{(1,1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3}$$

$\boxed{\text{z506}}$ $$\mathbb{Q}_{1,2}^{(1,1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3}$$

$\boxed{\text{z507}}$ $$\mathbb{Q}_{1,3}^{(1,1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$$

$\boxed{\text{z508}}$ $$\mathbb{Q}_{1,1}^{(1,1;c)}(T_u,b) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} + \frac{\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z509}}$ $$\mathbb{Q}_{1,2}^{(1,1;c)}(T_u,b) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{6} - \frac{\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$\boxed{\text{z510}}$ $$\mathbb{Q}_{1,3}^{(1,1;c)}(T_u,b) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{3}$$

$\boxed{\text{z511}}$ $$\mathbb{Q}_{1,1}^{(1,1;c)}(T_u,c) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$$

$\boxed{\text{z512}}$ $$\mathbb{Q}_{1,2}^{(1,1;c)}(T_u,c) = -\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z513}}$ $$\mathbb{Q}_{1,3}^{(1,1;c)}(T_u,c) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z514}}$ $$\mathbb{Q}_{3,1}^{(1,1;c)}(T_u,1) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z515}}$ $$\mathbb{Q}_{3,2}^{(1,1;c)}(T_u,1) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z516}}$ $$\mathbb{Q}_{3,3}^{(1,1;c)}(T_u,1) = \frac{\sqrt{3}\mathbb{Q}_{0}^{(1,1;a)}(A_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

$\boxed{\text{z517}}$ $$\mathbb{Q}_{3,1}^{(1,1;c)}(T_u,2a) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z518}}$ $$\mathbb{Q}_{3,2}^{(1,1;c)}(T_u,2a) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z519}}$ $$\mathbb{Q}_{3,3}^{(1,1;c)}(T_u,2a) = -\frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{3}^{(b)}(A_u)}{3}$$

$\boxed{\text{z520}}$ $$\mathbb{Q}_{3,1}^{(1,1;c)}(T_u,2b) = -\frac{\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z521}}$ $$\mathbb{Q}_{3,2}^{(1,1;c)}(T_u,2b) = \frac{\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} - \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{6}$$

$\boxed{\text{z522}}$ $$\mathbb{Q}_{3,3}^{(1,1;c)}(T_u,2b) = \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{3}$$

$\boxed{\text{z523}}$ $$\mathbb{G}_{2,1}^{(c)}(T_u,a) = \frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}$$

$\boxed{\text{z524}}$ $$\mathbb{G}_{2,2}^{(c)}(T_u,a) = -\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z525}}$ $$\mathbb{G}_{2,3}^{(c)}(T_u,a) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3} + \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z526}}$ $$\mathbb{G}_{2,1}^{(c)}(T_u,b) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$$

$\boxed{\text{z527}}$ $$\mathbb{G}_{2,2}^{(c)}(T_u,b) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$$

$\boxed{\text{z528}}$ $\mathbb{G}_{2,3}^{(c)}(T_u,b)=\frac{\sqrt{6}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}+\frac{\sqrt{6}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z529}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(T_u,a)=\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}+\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}-\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6}+\frac{\sqrt{2}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z530}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(T_u,a)=-\frac{\sqrt{6}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}+\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6}+\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}-\frac{\sqrt{2}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z531}}$ $\mathbb{G}_{2,3}^{(1,-1;c)}(T_u,a)=-\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}-\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}+\frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z532}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(T_u,b)=-\frac{\sqrt{21}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{21}-\frac{\sqrt{21}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{21}-\frac{\sqrt{35}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{21}$

$\boxed{\text{z533}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(T_u,b)=-\frac{\sqrt{21}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{21}-\frac{\sqrt{35}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{21}-\frac{\sqrt{21}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{21}$

$\boxed{\text{z534}}$ $\mathbb{G}_{2,3}^{(1,-1;c)}(T_u,b)=-\frac{\sqrt{21}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{21}-\frac{\sqrt{21}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{21}-\frac{\sqrt{35}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{21}+\frac{\sqrt{35}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{21}$

$\boxed{\text{z535}}$ $\mathbb{G}_{2,1}^{(1,-1;c)}(T_u,c)=\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6}+\frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z536}}$ $\mathbb{G}_{2,2}^{(1,-1;c)}(T_u,c)=\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6}+\frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z537}}$ $\mathbb{G}_{2,3}^{(1,-1;c)}(T_u,c)=\frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}+\frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z538}}$ $\mathbb{G}_{4,1}^{(1,-1;c)}(T_u,1)=\frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{4}-\frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{4}$

$\boxed{\text{z539}}$ $\mathbb{G}_{4,2}^{(1,-1;c)}(T_u,1)=-\frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{4}+\frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{4}$

$\boxed{\text{z540}}$ $\mathbb{G}_{4,3}^{(1,-1;c)}(T_u,1)=\frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{4}-\frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12}-\frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{4}$

$\boxed{\text{z541}}$ $\mathbb{G}_{4,1}^{(1,-1;c)}(T_u,2)=-\frac{\sqrt{105}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{84}-\frac{3\sqrt{7}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{28}-\frac{\sqrt{105}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{84}+\frac{3\sqrt{7}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{28}+\frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{7}$

$\boxed{\text{z542}}$ $\mathbb{G}_{4,2}^{(1,-1;c)}(T_u,2) = -\frac{\sqrt{105}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{84} + \frac{3\sqrt{7}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{28} - \frac{\sqrt{105}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{84} - \frac{3\sqrt{7}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} + \frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{7}$

$\boxed{\text{z543}}$ $\mathbb{G}_{4,3}^{(1,-1;c)}(T_u,2) = -\frac{\sqrt{105}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{84} - \frac{3\sqrt{7}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{28} - \frac{\sqrt{105}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{84} + \frac{3\sqrt{7}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{28} + \frac{\sqrt{7}\mathbb{M}_{3}^{(1,-1;a)}(A_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{7}$

$\boxed{\text{z544}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(T_u,a) = \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z545}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(T_u,a) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z546}}$ $\mathbb{G}_{2,3}^{(1,0;c)}(T_u,a) = \frac{\sqrt{6}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z547}}$ $\mathbb{G}_{2,1}^{(1,0;c)}(T_u,b) = \frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z548}}$ $\mathbb{G}_{2,2}^{(1,0;c)}(T_u,b) = -\frac{\sqrt{6}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z549}}$ $\mathbb{G}_{2,3}^{(1,0;c)}(T_u,b) = -\frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} - \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3} + \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z550}}$ $\mathbb{G}_{2,1}^{(1,1;c)}(T_u) = \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6}$

$\boxed{\text{z551}}$ $\mathbb{G}_{2,2}^{(1,1;c)}(T_u) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

$\boxed{\text{z552}}$ $\mathbb{G}_{2,3}^{(1,1;c)}(T_u) = \frac{\sqrt{6}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{6} + \frac{\sqrt{6}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{6}$

Atomic SAMB

- bra: $\langle\frac{1}{2},\frac{1}{2};p|$, $\langle\frac{1}{2},-\frac{1}{2};p|$, $\langle\frac{3}{2},\frac{3}{2};p|$, $\langle\frac{3}{2},\frac{1}{2};p|$, $\langle\frac{3}{2},-\frac{1}{2};p|$, $\langle\frac{3}{2},-\frac{3}{2};p|$

- ket: $\left|\frac{1}{2},\frac{1}{2};p\right\rangle$, $\left|\frac{1}{2},-\frac{1}{2};p\right\rangle$, $\left|\frac{3}{2},\frac{3}{2};p\right\rangle$, $\left|\frac{3}{2},\frac{1}{2};p\right\rangle$, $\left|\frac{3}{2},-\frac{1}{2};p\right\rangle$, $\left|\frac{3}{2},-\frac{3}{2};p\right\rangle$

$$\boxed{\text{x1}}\quad \mathbb{Q}_{0}^{(a)}(A_g)=\begin{bmatrix}\frac{\sqrt{6}}{6}&0&0&0&0&0\\0&\frac{\sqrt{6}}{6}&0&0&0&0\\0&0&\frac{\sqrt{6}}{6}&0&0&0\\0&0&0&\frac{\sqrt{6}}{6}&0&0\\0&0&0&0&\frac{\sqrt{6}}{6}&0\\0&0&0&0&0&\frac{\sqrt{6}}{6}\end{bmatrix}$$

$$\boxed{\text{x2}}\quad \mathbb{Q}_{2,1}^{(a)}(E_g)=\begin{bmatrix}0&0&0&-\frac{\sqrt{6}}{6}&0&0\\0&0&0&0&\frac{\sqrt{6}}{6}&0\\0&0&-\frac{\sqrt{3}}{6}&0&0&0\\-\frac{\sqrt{6}}{6}&0&0&\frac{\sqrt{3}}{6}&0&0\\0&\frac{\sqrt{6}}{6}&0&0&\frac{\sqrt{3}}{6}&0\\0&0&0&0&0&-\frac{\sqrt{3}}{6}\end{bmatrix}$$

$$\boxed{\text{x3}}\quad \mathbb{Q}_{2,2}^{(a)}(E_g)=\begin{bmatrix}0&0&0&0&0&-\frac{\sqrt{6}}{6}\\0&0&\frac{\sqrt{6}}{6}&0&0&0\\0&\frac{\sqrt{6}}{6}&0&0&-\frac{\sqrt{3}}{6}&0\\0&0&0&0&0&-\frac{\sqrt{3}}{6}\\0&0&-\frac{\sqrt{3}}{6}&0&0&0\\-\frac{\sqrt{6}}{6}&0&0&-\frac{\sqrt{3}}{6}&0&0\end{bmatrix}$$

$$\boxed{\text{x4}}\quad \mathbb{Q}_{2,1}^{(a)}(T_g)=\begin{bmatrix}0&0&\frac{\sqrt{6}i}{12}&0&\frac{\sqrt{2}i}{4}&0\\0&0&0&-\frac{\sqrt{2}i}{4}&0&-\frac{\sqrt{6}i}{12}\\-\frac{\sqrt{6}i}{12}&0&0&\frac{\sqrt{3}i}{6}&0&0\\0&\frac{\sqrt{2}i}{4}&-\frac{\sqrt{3}i}{6}&0&0&0\\-\frac{\sqrt{2}i}{4}&0&0&0&0&-\frac{\sqrt{3}i}{6}\\0&\frac{\sqrt{6}i}{12}&0&0&\frac{\sqrt{3}i}{6}&0\end{bmatrix}$$

$$\boxed{\text{x5}}\quad \mathbb{Q}_{2,2}^{(a)}(T_g)=\begin{bmatrix}0&0&\frac{\sqrt{6}}{12}&0&-\frac{\sqrt{2}}{4}&0\\0&0&0&-\frac{\sqrt{2}}{4}&0&\frac{\sqrt{6}}{12}\\\frac{\sqrt{6}}{12}&0&0&-\frac{\sqrt{3}}{6}&0&0\\0&-\frac{\sqrt{2}}{4}&-\frac{\sqrt{3}}{6}&0&0&0\\-\frac{\sqrt{2}}{4}&0&0&0&0&\frac{\sqrt{3}}{6}\\0&\frac{\sqrt{6}}{12}&0&0&\frac{\sqrt{3}}{6}&0\end{bmatrix}$$

$\boxed{\text{x6}}$ $$\mathbb{Q}_{2,3}^{(a)}(T_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{6}i}{6} \\ 0 & 0 & \frac{\sqrt{6}i}{6} & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{6}i}{6} & 0 & 0 & \frac{\sqrt{3}i}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{3}i}{6} \\ 0 & 0 & -\frac{\sqrt{3}i}{6} & 0 & 0 & 0 \\ -\frac{\sqrt{6}i}{6} & 0 & 0 & -\frac{\sqrt{3}i}{6} & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x7}}$ $$\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g) = \begin{bmatrix} 0 & 0 & 0 & -\frac{\sqrt{3}}{6} & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{3}}{6} & 0 \\ 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 & 0 \\ -\frac{\sqrt{3}}{6} & 0 & 0 & -\frac{\sqrt{6}}{6} & 0 & 0 \\ 0 & \frac{\sqrt{3}}{6} & 0 & 0 & -\frac{\sqrt{6}}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{6} \end{bmatrix}$$

$\boxed{\text{x8}}$ $$\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{3}}{6} \\ 0 & 0 & \frac{\sqrt{3}}{6} & 0 & 0 & 0 \\ 0 & \frac{\sqrt{3}}{6} & 0 & 0 & \frac{\sqrt{6}}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{6} \\ 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 & 0 \\ -\frac{\sqrt{3}}{6} & 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x9}}$ $$\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g) = \begin{bmatrix} 0 & 0 & \frac{\sqrt{3}i}{12} & 0 & \frac{i}{4} & 0 \\ 0 & 0 & 0 & -\frac{i}{4} & 0 & -\frac{\sqrt{3}i}{12} \\ -\frac{\sqrt{3}i}{12} & 0 & 0 & -\frac{\sqrt{6}i}{6} & 0 & 0 \\ 0 & \frac{i}{4} & \frac{\sqrt{6}i}{6} & 0 & 0 & 0 \\ -\frac{i}{4} & 0 & 0 & 0 & 0 & \frac{\sqrt{6}i}{6} \\ 0 & \frac{\sqrt{3}i}{12} & 0 & 0 & -\frac{\sqrt{6}i}{6} & 0 \end{bmatrix}$$

$\boxed{\text{x10}}$ $$\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g) = \begin{bmatrix} 0 & 0 & \frac{\sqrt{3}}{12} & 0 & -\frac{1}{4} & 0 \\ 0 & 0 & 0 & -\frac{1}{4} & 0 & \frac{\sqrt{3}}{12} \\ \frac{\sqrt{3}}{12} & 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 \\ 0 & -\frac{1}{4} & \frac{\sqrt{6}}{6} & 0 & 0 & 0 \\ -\frac{1}{4} & 0 & 0 & 0 & 0 & -\frac{\sqrt{6}}{6} \\ 0 & \frac{\sqrt{3}}{12} & 0 & 0 & -\frac{\sqrt{6}}{6} & 0 \end{bmatrix}$$

$$\boxed{\text{x11}}\quad \mathbb{Q}_{2,3}^{(1,-1;a)}(T_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{3}i}{6} \\ 0 & 0 & \frac{\sqrt{3}i}{6} & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}i}{6} & 0 & 0 & -\frac{\sqrt{6}i}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{6}i}{6} \\ 0 & 0 & \frac{\sqrt{6}i}{6} & 0 & 0 & 0 \\ -\frac{\sqrt{3}i}{6} & 0 & 0 & \frac{\sqrt{6}i}{6} & 0 & 0 \end{bmatrix}$$

$$\boxed{\text{x12}}\quad \mathbb{Q}_{0}^{(1,1;a)}(A_g) = \begin{bmatrix} -\frac{\sqrt{3}}{3} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}}{3} & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{3}}{6} & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{3}}{6} & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{3}}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{3}}{6} \end{bmatrix}$$

$$\boxed{\text{x13}}\quad \mathbb{G}_{1,1}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & \frac{\sqrt{3}i}{4} & 0 & -\frac{i}{4} & 0 \\ 0 & 0 & 0 & \frac{i}{4} & 0 & -\frac{\sqrt{3}i}{4} \\ -\frac{\sqrt{3}i}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{i}{4} & 0 & 0 & 0 & 0 \\ \frac{i}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{3}i}{4} & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\boxed{\text{x14}}\quad \mathbb{G}_{1,2}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & -\frac{\sqrt{3}}{4} & 0 & -\frac{1}{4} & 0 \\ 0 & 0 & 0 & -\frac{1}{4} & 0 & -\frac{\sqrt{3}}{4} \\ -\frac{\sqrt{3}}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{1}{4} & 0 & 0 & 0 & 0 \\ -\frac{1}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}}{4} & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\boxed{\text{x15}}\quad \mathbb{G}_{1,3}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & 0 & -\frac{i}{2} & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{i}{2} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{i}{2} & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{i}{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\boxed{\text{x16}} \quad \mathbb{M}_{1,1}^{(a)}(T_g) = \begin{bmatrix} 0 & \frac{1}{3} & -\frac{\sqrt{6}}{12} & 0 & \frac{\sqrt{2}}{12} & 0 \\ \frac{1}{3} & 0 & 0 & -\frac{\sqrt{2}}{12} & 0 & \frac{\sqrt{6}}{12} \\ -\frac{\sqrt{6}}{12} & 0 & 0 & \frac{\sqrt{3}}{6} & 0 & 0 \\ 0 & -\frac{\sqrt{2}}{12} & \frac{\sqrt{3}}{6} & 0 & \frac{1}{3} & 0 \\ \frac{\sqrt{2}}{12} & 0 & 0 & \frac{1}{3} & 0 & \frac{\sqrt{3}}{6} \\ 0 & \frac{\sqrt{6}}{12} & 0 & 0 & \frac{\sqrt{3}}{6} & 0 \end{bmatrix}$$

$$\boxed{\text{x17}} \quad \mathbb{M}_{1,2}^{(a)}(T_g) = \begin{bmatrix} 0 & -\frac{i}{3} & -\frac{\sqrt{6}i}{12} & 0 & -\frac{\sqrt{2}i}{12} & 0 \\ \frac{i}{3} & 0 & 0 & -\frac{\sqrt{2}i}{12} & 0 & -\frac{\sqrt{6}i}{12} \\ \frac{\sqrt{6}i}{12} & 0 & 0 & -\frac{\sqrt{3}i}{6} & 0 & 0 \\ 0 & \frac{\sqrt{2}i}{12} & \frac{\sqrt{3}i}{6} & 0 & -\frac{i}{3} & 0 \\ \frac{\sqrt{2}i}{12} & 0 & 0 & \frac{i}{3} & 0 & -\frac{\sqrt{3}i}{6} \\ 0 & \frac{\sqrt{6}i}{12} & 0 & 0 & \frac{\sqrt{3}i}{6} & 0 \end{bmatrix}$$

$$\boxed{\text{x18}} \quad \mathbb{M}_{1,3}^{(a)}(T_g) = \begin{bmatrix} \frac{1}{3} & 0 & 0 & \frac{\sqrt{2}}{6} & 0 & 0 \\ 0 & -\frac{1}{3} & 0 & 0 & \frac{\sqrt{2}}{6} & 0 \\ 0 & 0 & \frac{1}{2} & 0 & 0 & 0 \\ \frac{\sqrt{2}}{6} & 0 & 0 & \frac{1}{6} & 0 & 0 \\ 0 & \frac{\sqrt{2}}{6} & 0 & 0 & -\frac{1}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{1}{2} \end{bmatrix}$$

$$\boxed{\text{x19}} \quad \mathbb{M}_{3}^{(1,-1;a)}(A_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{i}{2} & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{i}{2} \\ 0 & 0 & -\frac{i}{2} & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{i}{2} & 0 & 0 \end{bmatrix}$$

$$\boxed{\text{x20}} \quad \mathbb{M}_{1,1}^{(1,-1;a)}(T_g) = \begin{bmatrix} 0 & -\frac{\sqrt{6}}{18} & \frac{1}{3} & 0 & -\frac{\sqrt{3}}{9} & 0 \\ -\frac{\sqrt{6}}{18} & 0 & 0 & \frac{\sqrt{3}}{9} & 0 & -\frac{1}{3} \\ \frac{1}{3} & 0 & 0 & \frac{\sqrt{2}}{6} & 0 & 0 \\ 0 & \frac{\sqrt{3}}{9} & \frac{\sqrt{2}}{6} & 0 & \frac{\sqrt{6}}{9} & 0 \\ -\frac{\sqrt{3}}{9} & 0 & 0 & \frac{\sqrt{6}}{9} & 0 & \frac{\sqrt{2}}{6} \\ 0 & -\frac{1}{3} & 0 & 0 & \frac{\sqrt{2}}{6} & 0 \end{bmatrix}$$

$$\boxed{\text{x21}} \quad \mathbb{M}_{1,2}^{(1,-1;a)}(T_g) = \begin{bmatrix} 0 & \frac{\sqrt{6}i}{18} & \frac{i}{3} & 0 & \frac{\sqrt{3}i}{9} & 0 \\ -\frac{\sqrt{6}i}{18} & 0 & 0 & \frac{\sqrt{3}i}{9} & 0 & \frac{i}{3} \\ -\frac{i}{3} & 0 & 0 & -\frac{\sqrt{2}i}{6} & 0 & 0 \\ 0 & -\frac{\sqrt{3}i}{9} & \frac{\sqrt{2}i}{6} & 0 & -\frac{\sqrt{6}i}{9} & 0 \\ -\frac{\sqrt{3}i}{9} & 0 & 0 & \frac{\sqrt{6}i}{9} & 0 & -\frac{\sqrt{2}i}{6} \\ 0 & -\frac{i}{3} & 0 & 0 & \frac{\sqrt{2}i}{6} & 0 \end{bmatrix}$$

$$\boxed{\text{x22}} \quad \mathbb{M}_{1,3}^{(1,-1;a)}(T_g) = \begin{bmatrix} -\frac{\sqrt{6}}{18} & 0 & 0 & -\frac{2\sqrt{3}}{9} & 0 & 0 \\ 0 & \frac{\sqrt{6}}{18} & 0 & 0 & -\frac{2\sqrt{3}}{9} & 0 \\ 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 & 0 \\ -\frac{2\sqrt{3}}{9} & 0 & 0 & \frac{\sqrt{6}}{18} & 0 & 0 \\ 0 & -\frac{2\sqrt{3}}{9} & 0 & 0 & -\frac{\sqrt{6}}{18} & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{6}}{6} \end{bmatrix}$$

$$\boxed{\text{x23}} \quad \mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{15}}{20} & 0 & -\frac{\sqrt{5}}{4} \\ 0 & 0 & \frac{\sqrt{15}}{20} & 0 & -\frac{3\sqrt{5}}{20} & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{5}}{20} & 0 & \frac{\sqrt{15}}{20} \\ 0 & 0 & -\frac{\sqrt{5}}{4} & 0 & \frac{\sqrt{15}}{20} & 0 \end{bmatrix}$$

$$\boxed{\text{x24}} \quad \mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{15}i}{20} & 0 & -\frac{\sqrt{5}i}{4} \\ 0 & 0 & \frac{\sqrt{15}i}{20} & 0 & \frac{3\sqrt{5}i}{20} & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{5}i}{20} & 0 & -\frac{\sqrt{15}i}{20} \\ 0 & 0 & \frac{\sqrt{5}i}{4} & 0 & \frac{\sqrt{15}i}{20} & 0 \end{bmatrix}$$

$$\boxed{\text{x25}} \quad \mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{5}}{10} & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{5}}{10} & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{3\sqrt{5}}{10} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{5}}{10} \end{bmatrix}$$

$\boxed{\text{x26}}$ $$\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)=\begin{bmatrix}0&0&0&0&0&0\\0&0&0&0&0&0\\0&0&0&\frac{1}{4}&0&\frac{\sqrt{3}}{4}\\0&0&\frac{1}{4}&0&-\frac{\sqrt{3}}{4}&0\\0&0&0&-\frac{\sqrt{3}}{4}&0&\frac{1}{4}\\0&0&\frac{\sqrt{3}}{4}&0&\frac{1}{4}&0\end{bmatrix}$$

$\boxed{\text{x27}}$ $$\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)=\begin{bmatrix}0&0&0&0&0&0\\0&0&0&0&0&0\\0&0&0&\frac{i}{4}&0&-\frac{\sqrt{3}i}{4}\\0&0&-\frac{i}{4}&0&-\frac{\sqrt{3}i}{4}&0\\0&0&0&\frac{\sqrt{3}i}{4}&0&\frac{i}{4}\\0&0&\frac{\sqrt{3}i}{4}&0&-\frac{i}{4}&0\end{bmatrix}$$

$\boxed{\text{x28}}$ $$\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)=\begin{bmatrix}0&0&0&0&0&0\\0&0&0&0&0&0\\0&0&0&0&-\frac{1}{2}&0\\0&0&0&0&0&\frac{1}{2}\\0&0&-\frac{1}{2}&0&0&0\\0&0&0&\frac{1}{2}&0&0\end{bmatrix}$$

$\boxed{\text{x29}}$ $$\mathbb{M}_{1,1}^{(1,1;a)}(T_g)=\begin{bmatrix}0&\frac{\sqrt{30}}{9}&\frac{\sqrt{5}}{12}&0&-\frac{\sqrt{15}}{36}&0\\\frac{\sqrt{30}}{9}&0&0&\frac{\sqrt{15}}{36}&0&-\frac{\sqrt{5}}{12}\\\frac{\sqrt{5}}{12}&0&0&-\frac{\sqrt{10}}{30}&0&0\\0&\frac{\sqrt{15}}{36}&-\frac{\sqrt{10}}{30}&0&-\frac{\sqrt{30}}{45}&0\\-\frac{\sqrt{15}}{36}&0&0&-\frac{\sqrt{30}}{45}&0&-\frac{\sqrt{10}}{30}\\0&-\frac{\sqrt{5}}{12}&0&0&-\frac{\sqrt{10}}{30}&0\end{bmatrix}$$

$\boxed{\text{x30}}$ $$\mathbb{M}_{1,2}^{(1,1;a)}(T_g)=\begin{bmatrix}0&-\frac{\sqrt{30}i}{9}&\frac{\sqrt{5}i}{12}&0&\frac{\sqrt{15}i}{36}&0\\\frac{\sqrt{30}i}{9}&0&0&\frac{\sqrt{15}i}{36}&0&\frac{\sqrt{5}i}{12}\\-\frac{\sqrt{5}i}{12}&0&0&\frac{\sqrt{10}i}{30}&0&0\\0&-\frac{\sqrt{15}i}{36}&-\frac{\sqrt{10}i}{30}&0&\frac{\sqrt{30}i}{45}&0\\-\frac{\sqrt{15}i}{36}&0&0&-\frac{\sqrt{30}i}{45}&0&\frac{\sqrt{10}i}{30}\\0&-\frac{\sqrt{5}i}{12}&0&0&-\frac{\sqrt{10}i}{30}&0\end{bmatrix}$$

$\boxed{\text{x31}}$ $$\mathbb{M}_{1,3}^{(1,1;a)}(T_g) = \begin{bmatrix} \frac{\sqrt{30}}{9} & 0 & 0 & -\frac{\sqrt{15}}{18} & 0 & 0 \\ 0 & -\frac{\sqrt{30}}{9} & 0 & 0 & -\frac{\sqrt{15}}{18} & 0 \\ 0 & 0 & -\frac{\sqrt{30}}{30} & 0 & 0 & 0 \\ -\frac{\sqrt{15}}{18} & 0 & 0 & -\frac{\sqrt{30}}{90} & 0 & 0 \\ 0 & -\frac{\sqrt{15}}{18} & 0 & 0 & \frac{\sqrt{30}}{90} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{30}}{30} \end{bmatrix}$$

$\boxed{\text{x32}}$ $$\mathbb{T}_{2,1}^{(1,0;a)}(E_g) = \begin{bmatrix} 0 & 0 & 0 & \frac{i}{2} & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{i}{2} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{i}{2} & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{i}{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x33}}$ $$\mathbb{T}_{2,2}^{(1,0;a)}(E_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & \frac{i}{2} \\ 0 & 0 & -\frac{i}{2} & 0 & 0 & 0 \\ 0 & \frac{i}{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{i}{2} & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x34}}$ $$\mathbb{T}_{2,1}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & \frac{1}{4} & 0 & \frac{\sqrt{3}}{4} & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{3}}{4} & 0 & -\frac{1}{4} \\ \frac{1}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}}{4} & 0 & 0 & 0 & 0 \\ \frac{\sqrt{3}}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{1}{4} & 0 & 0 & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x35}}$ $$\mathbb{T}_{2,2}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & -\frac{i}{4} & 0 & \frac{\sqrt{3}i}{4} & 0 \\ 0 & 0 & 0 & \frac{\sqrt{3}i}{4} & 0 & -\frac{i}{4} \\ \frac{i}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}i}{4} & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{3}i}{4} & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{i}{4} & 0 & 0 & 0 & 0 \end{bmatrix}$$

$\boxed{\text{x36}}$ $$\mathbb{T}_{2,3}^{(1,0;a)}(T_g) = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & \frac{1}{2} & 0 & 0 & 0 \\ 0 & \frac{1}{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{1}{2} & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

Cluster SAMB

- Site cluster

** Wyckoff: `8b`

$\boxed{\text{y1}}$ $\mathbb{Q}_{0}^{(s)}(A_g) = \left[\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y2}}$ $\mathbb{Q}_{3}^{(s)}(A_u) = \left[\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y3}}$ $\mathbb{Q}_{2,1}^{(s)}(T_g) = \left[\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y4}}$ $\mathbb{Q}_{2,2}^{(s)}(T_g) = \left[\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y5}}$ $\mathbb{Q}_{2,3}^{(s)}(T_g) = \left[\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y6}}$ $\mathbb{Q}_{1,1}^{(s)}(T_u) = \left[\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y7}}$ $\mathbb{Q}_{1,2}^{(s)}(T_u) = \left[\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}\right]$

$\boxed{\text{y8}}$ $\mathbb{Q}_{1,3}^{(s)}(T_u) = \left[\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, -\frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}, \frac{\sqrt{2}}{4}\right]$

- Bond cluster

** Wyckoff: `12b@12c`

$\boxed{\text{y9}}$ $\mathbb{Q}_{0}^{(s)}(A_g) = \left[\frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}, \frac{\sqrt{3}}{6}\right]$

$\boxed{\text{y10}}$ $\mathbb{T}_{3}^{(s)}(A_u) = \left[\frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}, \frac{\sqrt{3}i}{6}\right]$

$\boxed{\text{y11}}$ $\mathbb{Q}_{2,1}^{(s)}(E_g) = \left[-\frac{5\sqrt{2778}}{1389}, -\frac{5\sqrt{2778}}{1389}, -\frac{5\sqrt{2778}}{1389}, -\frac{5\sqrt{2778}}{1389}, -\frac{23\sqrt{2778}}{5556}, -\frac{23\sqrt{2778}}{5556}, -\frac{23\sqrt{2778}}{5556}, -\frac{23\sqrt{2778}}{5556}, \frac{43\sqrt{2778}}{5556}, \frac{43\sqrt{2778}}{5556}, \frac{43\sqrt{2778}}{5556}, \frac{43\sqrt{2778}}{5556}\right]$

$\boxed{\text{y12}}$ $\mathbb{Q}_{2,2}^{(s)}(E_g) = \left[\frac{11\sqrt{926}}{926}, \frac{11\sqrt{926}}{926}, \frac{11\sqrt{926}}{926}, \frac{11\sqrt{926}}{926}, -\frac{21\sqrt{926}}{1852}, -\frac{21\sqrt{926}}{1852}, -\frac{21\sqrt{926}}{1852}, -\frac{21\sqrt{926}}{1852}, -\frac{\sqrt{926}}{1852}, -\frac{\sqrt{926}}{1852}, -\frac{\sqrt{926}}{1852}, -\frac{\sqrt{926}}{1852}\right]$

$\boxed{\text{y13}}$ $\mathbb{M}_{2,1}^{(s)}(E_u) = \left[\frac{11\sqrt{926}i}{926}, \frac{11\sqrt{926}i}{926}, \frac{11\sqrt{926}i}{926}, \frac{11\sqrt{926}i}{926}, -\frac{21\sqrt{926}i}{1852}, -\frac{21\sqrt{926}i}{1852}, -\frac{21\sqrt{926}i}{1852}, -\frac{21\sqrt{926}i}{1852}, -\frac{\sqrt{926}i}{1852}, -\frac{\sqrt{926}i}{1852}, -\frac{\sqrt{926}i}{1852}, -\frac{\sqrt{926}i}{1852}\right]$

$\boxed{\text{y14}}$ $\mathbb{M}_{2,2}^{(s)}(E_u) = \left[\frac{5\sqrt{2778}i}{1389}, \frac{5\sqrt{2778}i}{1389}, \frac{5\sqrt{2778}i}{1389}, \frac{5\sqrt{2778}i}{1389}, \frac{23\sqrt{2778}i}{5556}, \frac{23\sqrt{2778}i}{5556}, \frac{23\sqrt{2778}i}{5556}, \frac{23\sqrt{2778}i}{5556}, -\frac{43\sqrt{2778}i}{5556}, -\frac{43\sqrt{2778}i}{5556}, -\frac{43\sqrt{2778}i}{5556}, -\frac{43\sqrt{2778}i}{5556}\right]$

$\boxed{\text{y15}}$ $\mathbb{M}_{1,1}^{(s)}(T_g) = \left[0, 0, 0, 0, \frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}\right]$

$\boxed{\text{y16}}$ $\mathbb{M}_{1,2}^{(s)}(T_g) = \left[\frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, 0, 0, 0, 0, \frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}\right]$

$\boxed{\text{y17}}$ $\mathbb{M}_{1,3}^{(s)}(T_g) = \left[\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, 0, 0, 0, 0\right]$

$\boxed{\text{y18}}$ $\mathbb{Q}_{2,1}^{(s)}(T_g) = \left[\frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}, 0, 0, 0, 0, 0, 0, 0, 0\right]$

$\boxed{\text{y19}}$ $\mathbb{Q}_{2,2}^{(s)}(T_g) = \left[0, 0, 0, 0, \frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}, 0, 0, 0, 0\right]$

$\boxed{\text{y20}}$ $\mathbb{Q}_{2,3}^{(s)}(T_g) = \left[0, 0, 0, 0, 0, 0, 0, 0, \frac{1}{2}, -\frac{1}{2}, -\frac{1}{2}, \frac{1}{2}\right]$

$\boxed{\text{y21}}$ $\mathbb{T}_{2,1}^{(s)}(T_g) = \left[0, 0, 0, 0, \frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}\right]$

$\boxed{\text{y22}}$ $\mathbb{T}_{2,2}^{(s)}(T_g) = \left[-\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, 0, 0, 0, 0, \frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}\right]$

$\boxed{\text{y23}}$ $\mathbb{T}_{2,3}^{(s)}(T_g) = \left[\frac{\sqrt{7}i}{7}, \frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, -\frac{\sqrt{7}i}{7}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, -\frac{\sqrt{21}i}{14}, \frac{\sqrt{21}i}{14}, 0, 0, 0, 0\right]$

$\boxed{\text{y24}}$ $\mathbb{Q}_{1,1}^{(s)}(T_u) = \left[0,\ 0,\ 0,\ 0,\ \frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14}\right]$

$\boxed{\text{y25}}$ $\mathbb{Q}_{1,2}^{(s)}(T_u) = \left[\frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ 0,\ 0,\ 0,\ 0,\ \frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7}\right]$

$\boxed{\text{y26}}$ $\mathbb{Q}_{1,3}^{(s)}(T_u) = \left[\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ 0,\ 0,\ 0,\ 0\right]$

$\boxed{\text{y27}}$ $\mathbb{T}_{1,1}^{(s)}(T_u) = \left[\frac{i}{2},\ -\frac{i}{2},\ -\frac{i}{2},\ \frac{i}{2},\ 0,\ 0,\ 0,\ 0,\ 0,\ 0,\ 0,\ 0\right]$

$\boxed{\text{y28}}$ $\mathbb{T}_{1,2}^{(s)}(T_u) = \left[0,\ 0,\ 0,\ 0,\ \frac{i}{2},\ -\frac{i}{2},\ -\frac{i}{2},\ \frac{i}{2},\ 0,\ 0,\ 0,\ 0\right]$

$\boxed{\text{y29}}$ $\mathbb{T}_{1,3}^{(s)}(T_u) = \left[0,\ 0,\ 0,\ 0,\ 0,\ 0,\ 0,\ 0,\ \frac{i}{2},\ -\frac{i}{2},\ -\frac{i}{2},\ \frac{i}{2}\right]$

$\boxed{\text{y30}}$ $\mathbb{Q}_{3,1}^{(s)}(T_u, 1) = \left[0,\ 0,\ 0,\ 0,\ \frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7}\right]$

$\boxed{\text{y31}}$ $\mathbb{Q}_{3,2}^{(s)}(T_u, 1) = \left[-\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ 0,\ 0,\ 0,\ 0,\ \frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14}\right]$

$\boxed{\text{y32}}$ $\mathbb{Q}_{3,3}^{(s)}(T_u, 1) = \left[\frac{\sqrt{21}}{14},\ \frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ -\frac{\sqrt{21}}{14},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ -\frac{\sqrt{7}}{7},\ \frac{\sqrt{7}}{7},\ 0,\ 0,\ 0,\ 0\right]$

Site and Bond

Table 4: Orbital of each site

#	site	orbital
1	A	$\lvert\frac{1}{2},\frac{1}{2};p\rangle$, $\lvert\frac{1}{2},-\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},\frac{3}{2};p\rangle$, $\lvert\frac{3}{2},\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},-\frac{1}{2};p\rangle$, $\lvert\frac{3}{2},-\frac{3}{2};p\rangle$

Table 5: Neighbor and bra-ket of each bond

#	head	tail	neighbor	head (bra)	tail (ket)
1	`A`	`A`	`[1]`	`[p]`	`[p]`

Site in Unit Cell

Sites in (conventional) cell (no plus set), SL = sublattice

Table 6: 'A' (#1) site cluster (8b), .3.

SL	position ($\boldsymbol{s}$)	mapping
1	`[ 1.00000, 1.00000, 1.00000]`	`[1,5,9]`
2	`[-1.00000,-1.00000, 1.00000]`	`[2,7,12]`
3	`[-1.00000, 1.00000,-1.00000]`	`[3,8,10]`
4	`[ 1.00000,-1.00000,-1.00000]`	`[4,6,11]`
5	`[-1.00000,-1.00000,-1.00000]`	`[13,17,21]`
6	`[ 1.00000, 1.00000,-1.00000]`	`[14,19,24]`
7	`[ 1.00000,-1.00000, 1.00000]`	`[15,20,22]`
8	`[-1.00000, 1.00000, 1.00000]`	`[16,18,23]`

Bond in Unit Cell

Bonds in (conventional) cell (no plus set): tail, head = (SL, plus set), (N)D = (non)directional (listed up to 5th neighbor at most)

Table 7: 1-th 'A'-'A' [1] (#1) bond cluster (12b@12c), ND, $|\boldsymbol{v}|$= 2.0 (cartesian)

SL	vector ($\boldsymbol{v}$)	center ($\boldsymbol{c}$)	mapping	head	tail	$\boldsymbol{R}$ (primitive)
1	[-2.00000, 0.00000, 0.00000]	[0.00000, 1.00000, 1.00000]	[1,-16]	(8,1)	(1,1)	[0,0,0]
2	[2.00000, 0.00000, 0.00000]	[0.00000,-1.00000, 1.00000]	[2,-15]	(7,1)	(2,1)	[0,0,0]
3	[2.00000, 0.00000, 0.00000]	[0.00000, 1.00000,-1.00000]	[3,-14]	(6,1)	(3,1)	[0,0,0]
4	[-2.00000, 0.00000, 0.00000]	[0.00000,-1.00000,-1.00000]	[4,-13]	(5,1)	(4,1)	[0,0,0]
5	[0.00000,-2.00000, 0.00000]	[1.00000, 0.00000, 1.00000]	[5,-20]	(7,1)	(1,1)	[0,0,0]
6	[0.00000, 2.00000, 0.00000]	[1.00000, 0.00000,-1.00000]	[6,-19]	(6,1)	(4,1)	[0,0,0]
7	[0.00000, 2.00000, 0.00000]	[-1.00000, 0.00000, 1.00000]	[7,-18]	(8,1)	(2,1)	[0,0,0]
8	[0.00000,-2.00000, 0.00000]	[-1.00000, 0.00000,-1.00000]	[8,-17]	(5,1)	(3,1)	[0,0,0]
9	[0.00000, 0.00000,-2.00000]	[1.00000, 1.00000, 0.00000]	[9,-24]	(6,1)	(1,1)	[0,0,0]
10	[0.00000, 0.00000, 2.00000]	[-1.00000, 1.00000, 0.00000]	[10,-23]	(8,1)	(3,1)	[0,0,0]
11	[0.00000, 0.00000, 2.00000]	[1.00000,-1.00000, 0.00000]	[11,-22]	(7,1)	(4,1)	[0,0,0]
12	[0.00000, 0.00000,-2.00000]	[-1.00000,-1.00000, 0.00000]	[12,-21]	(5,1)	(2,1)	[0,0,0]