Model for "Th"

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]`
- Atomic selection:
  - Type: `[Q, G, M, T]`
  - 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]`
- Site-cluster selection:
  - Rank: `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]`
  - Irrep.: $[A_g, E_g, T_g, A_u, E_u, T_u]$
- Bond-cluster selection:
  - Type: `[Q, G, M, T]`
  - Rank: `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11]`
  - Irrep.: $[A_g, E_g, T_g, A_u, E_u, T_u]$
- Max. neighbor: `10`
- Search cell range: `(-2, 3), (-2, 3), (-2, 3)`
- Toroidal priority: `false`

Group and Unit Cell

- Group: PG No. 29 T_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):
  - $\boldsymbol{a}_1 = [\ 1.00000,\ 0.00000,\ 0.00000]$
  - $\boldsymbol{a}_2 = [\ 0.00000,\ 1.00000,\ 0.00000]$
  - $\boldsymbol{a}_3 = [\ 0.00000,\ 0.00000,\ 1.00000]$

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}
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}		

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	-	-	$\sqrt{15}xyz$

continued ...

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Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
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	$-\frac{\sqrt{15}\left(x^4-12x^2y^2+6x^2z^2+y^4+6y^2z^2-2z^4\right)}{12}$
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	$\frac{\sqrt{15}x(y-z)(y+z)}{2}$

continued …

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Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
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	$-\frac{\sqrt{35}xz(x-z)(x+z)}{2}$
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	$\frac{\sqrt{5}yz(6x^2-y^2-z^2)}{2}$
33	$\mathbb{Q}_{4,2}(T_g,2)$					2	$-\frac{\sqrt{5}xz(x^2-6y^2+z^2)}{2}$
34	$\mathbb{Q}_{4,3}(T_g,2)$					3	$-\frac{\sqrt{5}xy(x^2+y^2-6z^2)}{2}$
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	$\frac{x(2x^2-3y^2-3z^2)}{2}$
42	$\mathbb{Q}_{3,2}(T_u,1)$					2	$-\frac{y(3x^2-2y^2+3z^2)}{2}$
43	$\mathbb{Q}_{3,3}(T_u,1)$					3	$-\frac{z(3x^2+3y^2-2z^2)}{2}$
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	$\frac{\sqrt{35}yz(y-z)(y+z)}{2}$

continued …

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Table 2

#	symbol	irrep.	rank	X	multiplicity	component	symmetry
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	$\frac{\sqrt{5}yz(6x^2-y^2-z^2)}{2}$
51	$\mathbb{G}_{4,2}(T_u,2)$					2	$-\frac{\sqrt{5}xz(x^2-6y^2+z^2)}{2}$
52	$\mathbb{G}_{4,3}(T_u,2)$					3	$-\frac{\sqrt{5}xy(x^2+y^2-6z^2)}{2}$
53	$\mathbb{Q}_{5,1}(T_u,3)$	T_u	5	$Q,\,T$	3	1	$\frac{\sqrt{105}x(y-z)(y+z)(2x^2-y^2-z^2)}{4}$
54	$\mathbb{Q}_{5,2}(T_u,3)$					2	$\frac{\sqrt{105}y(x-z)(x+z)(x^2-2y^2+z^2)}{4}$
55	$\mathbb{Q}_{5,3}(T_u,3)$					3	$-\frac{\sqrt{105}z(x-y)(x+y)(x^2+y^2-2z^2)}{4}$

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)

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Table 3

#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)	#	orbital@atom(SL)
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)
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

552 (all 552) SAMBs

- 'A' site-cluster : A
  * 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

$\boxed{\text{z1}}$ $\quad \mathbb{Q}_0^{(c)}(A_g,a) = \mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_0^{(s)}(A_g)$

$\boxed{\text{z2}}$ $\quad \mathbb{Q}_0^{(c)}(A_g,b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z3}}$ $\quad \mathbb{Q}_0^{(1,-1;c)}(A_g) = \dfrac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z4}}$ $\quad \mathbb{Q}_0^{(1,1;c)}(A_g) = \mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_0^{(s)}(A_g)$

$\boxed{\text{z5}}$ $\quad \mathbb{G}_3^{(1,0;c)}(A_g) = \dfrac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3} + \dfrac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

$\boxed{\text{z27}}$ $\quad \mathbb{Q}_3^{(c)}(A_u,a) = \mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_3^{(s)}(A_u)$

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$$\boxed{\text{z28}} \quad \mathbb{Q}_3^{(c)}(A_u, b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

$$\boxed{\text{z29}} \quad \mathbb{Q}_3^{(1,-1;c)}(A_u) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z86}} \quad \mathbb{Q}_{5,1}^{(1,-1;c)}(E_u) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_3^{(s)}(A_u)}{2}$$

$$\boxed{\text{z87}} \quad \mathbb{Q}_{5,2}^{(1,-1;c)}(E_u) = -\frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_3^{(s)}(A_u)}{2}$$

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

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

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

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

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

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

$$\boxed{\text{z94}} \quad \mathbb{Q}_{2,1}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,1}^{(s)}(T_g)}{3}$$

$$\boxed{\text{z95}} \quad \mathbb{Q}_{2,2}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,2}^{(s)}(T_g)}{3}$$

$$\boxed{\text{z96}} \quad \mathbb{Q}_{2,3}^{(c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$$

$$\boxed{\text{z97}} \quad \mathbb{Q}_{2,1}^{(c)}(T_g,b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$$

$\boxed{\text{z98}}$ $\quad \mathbb{Q}_{2,2}^{(c)}(T_g, b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

$\boxed{\text{z99}}$ $\quad \mathbb{Q}_{2,3}^{(c)}(T_g, b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

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

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

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

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

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

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

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

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

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

$\boxed{\text{z109}}$ $\quad \mathbb{Q}_{2,1}^{(1,-1;c)}(T_g, a) = \dfrac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

$\boxed{\text{z110}}$ $\quad \mathbb{Q}_{2,2}^{(1,-1;c)}(T_g, a) = \dfrac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

$\boxed{\text{z111}}$ $\quad \mathbb{Q}_{2,3}^{(1,-1;c)}(T_g, a) = \dfrac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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$\boxed{\text{z279}}$ $\quad \mathbb{Q}_{2,3}^{(1,1;c)}(T_g) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{2,3}^{(s)}(T_g)}{3}$

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

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

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

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

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

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

$\boxed{\text{z301}}$ $\quad \mathbb{G}_{1,1}^{(1,0;c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

$\boxed{\text{z302}}$ $\quad \mathbb{G}_{1,2}^{(1,0;c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

$\boxed{\text{z303}}$ $\quad \mathbb{G}_{1,3}^{(1,0;c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_0^{(s)}(A_g)}{3}$

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

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

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

$\boxed{\text{z337}}$ $\quad \mathbb{Q}_{1,1}^{(c)}(T_u,a) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{1,1}^{(s)}(T_u)}{3}$

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$$\boxed{\text{z338}} \quad \mathbb{Q}_{1,2}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{1,2}^{(s)}(T_u)}{3}$$

$$\boxed{\text{z339}} \quad \mathbb{Q}_{1,3}^{(c)}(T_u, a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{1,3}^{(s)}(T_u)}{3}$$

$$\boxed{\text{z340}} \quad \mathbb{Q}_{1,1}^{(c)}(T_u, b) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

$$\boxed{\text{z341}} \quad \mathbb{Q}_{1,2}^{(c)}(T_u, b) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

$$\boxed{\text{z342}} \quad \mathbb{Q}_{1,3}^{(c)}(T_u, b) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z352}} \quad \mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

$$\boxed{\text{z353}} \quad \mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

$$\boxed{\text{z354}} \quad \mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,a) = \frac{\sqrt{3}\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_3^{(s)}(A_u)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- 'A'–'A' bond-cluster : `A;A_001_1`
  * 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`

$\boxed{\text{z6}}$ $\quad \mathbb{Q}_0^{(c)}(A_g,a) = \mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_0^{(b)}(A_g)$

$\boxed{\text{z7}}$ $\quad \mathbb{Q}_0^{(c)}(A_g,b) = \dfrac{\sqrt{5}\,\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{5}$

$\boxed{\text{z8}}$ $\quad \mathbb{Q}_0^{(c)}(A_g,c) = \dfrac{\sqrt{3}\,\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z9}}$ $\quad \mathbb{Q}_4^{(c)}(A_g) = \dfrac{\sqrt{30}\,\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \dfrac{\sqrt{30}\,\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15}$

$\boxed{\text{z10}}$ $\quad \mathbb{Q}_0^{(1,-1;c)}(A_g,a) = \dfrac{\sqrt{5}\,\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{5} + \dfrac{\sqrt{5}\,\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{5}$

$\boxed{\text{z11}}$ $\quad \mathbb{Q}_0^{(1,-1;c)}(A_g,b) = \dfrac{\sqrt{3}\,\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z12}}$ $\quad \mathbb{Q}_4^{(1,-1;c)}(A_g,a) = \dfrac{\sqrt{30}\,\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{10} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,1}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{15} + \dfrac{\sqrt{30}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{10} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{15} - \dfrac{\sqrt{30}\,\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{15}$

$\boxed{\text{z13}}$ $\quad \mathbb{Q}_4^{(1,-1;c)}(A_g,b) = \dfrac{\sqrt{3}\,\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z14}}$ $\quad \mathbb{Q}_4^{(1,-1;c)}(A_g,c) = -\dfrac{\sqrt{3}\,\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} - \dfrac{\sqrt{3}\,\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} - \dfrac{\sqrt{3}\,\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z15}}$ $\quad \mathbb{Q}_0^{(1,0;c)}(A_g) = \dfrac{\sqrt{3}\,\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{2,1}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{2,2}^{(b)}(T_g)}{3} + \dfrac{\sqrt{3}\,\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{2,3}^{(b)}(T_g)}{3}$

$$\boxed{\text{z16}} \quad \mathbb{Q}_0^{(1,1;c)}(A_g,a) = \mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_0^{(b)}(A_g)$$

$$\boxed{\text{z17}} \quad \mathbb{Q}_0^{(1,1;c)}(A_g,b) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{M}_{1,1}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{M}_{1,2}^{(b)}(T_g)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{M}_{1,3}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z18}} \quad \mathbb{G}_3^{(c)}(A_g,a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2} - \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z43}} \quad \mathbb{Q}_3^{(1,0;c)}(A_u,b) = \frac{\sqrt{3}\mathbb{T}_{2,1}^{(1,0;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,2}^{(1,0;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z44}} \quad \mathbb{G}_0^{(c)}(A_u) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z45}} \quad \mathbb{G}_0^{(1,-1;c)}(A_u,a) = \mathbb{M}_3^{(1,-1;a)}(A_g)\mathbb{T}_3^{(b)}(A_u)$$

$$\boxed{\text{z46}} \quad \mathbb{G}_0^{(1,-1;c)}(A_u,b) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z47}} \quad \mathbb{G}_4^{(1,-1;c)}(A_u) = \frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z48}} \quad \mathbb{G}_0^{(1,0;c)}(A_u,a) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z49}} \quad \mathbb{G}_0^{(1,0;c)}(A_u,b) = \frac{\sqrt{2}\mathbb{T}_{2,1}^{(1,0;a)}(E_g)\mathbb{M}_{2,1}^{(b)}(E_u)}{2} + \frac{\sqrt{2}\mathbb{T}_{2,2}^{(1,0;a)}(E_g)\mathbb{M}_{2,2}^{(b)}(E_u)}{2}$$

$$\boxed{\text{z50}} \quad \mathbb{G}_4^{(1,0;c)}(A_u) = \frac{\sqrt{3}\mathbb{G}_{1,1}^{(1,0;a)}(T_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,2}^{(1,0;a)}(T_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3} + \frac{\sqrt{3}\mathbb{G}_{1,3}^{(1,0;a)}(T_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

$$\boxed{\text{z51}} \quad \mathbb{G}_0^{(1,1;c)}(A_u) = \frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3} + \frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z52}} \quad \mathbb{Q}_{2,1}^{(c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{2}$$

$$\boxed{\text{z53}} \quad \mathbb{Q}_{2,2}^{(c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{2}$$

$$\boxed{\text{z54}} \quad \mathbb{Q}_{2,1}^{(c)}(E_g,b) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(a)}(E_g)\mathbb{Q}_0^{(b)}(A_g)}{2}$$

$$\boxed{\text{z55}} \quad \mathbb{Q}_{2,2}^{(c)}(E_g,b) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(a)}(E_g)\mathbb{Q}_0^{(b)}(A_g)}{2}$$

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

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

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

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

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

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

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

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

$$\boxed{\text{z64}} \quad \mathbb{Q}_{2,1}^{(1,-1;c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_{2,1}^{(1,-1;a)}(E_g)\mathbb{Q}_0^{(b)}(A_g)}{2}$$

$$\boxed{\text{z65}} \quad \mathbb{Q}_{2,2}^{(1,-1;c)}(E_g,a) = \frac{\sqrt{2}\mathbb{Q}_{2,2}^{(1,-1;a)}(E_g)\mathbb{Q}_0^{(b)}(A_g)}{2}$$

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

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

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

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

$\qquad + \dfrac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,3}^{(b)}(T_g)}{42}$

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

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

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

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

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

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

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

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

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

$\qquad - \dfrac{3\sqrt{14}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{M}_{1,2}^{(b)}(T_g)}{28} + \dfrac{\sqrt{210}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{M}_{1,3}^{(b)}(T_g)}{42}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\boxed{\text{z169}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3}$

$\boxed{\text{z170}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3}$

$\boxed{\text{z171}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,a) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$

$\boxed{\text{z172}}$ $\mathbb{Q}_{2,1}^{(c)}(T_g,b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,1}^{(a)}(T_g)\mathbb{Q}_0^{(b)}(A_g)}{3}$

$\boxed{\text{z173}}$ $\mathbb{Q}_{2,2}^{(c)}(T_g,b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,2}^{(a)}(T_g)\mathbb{Q}_0^{(b)}(A_g)}{3}$

$\boxed{\text{z174}}$ $\mathbb{Q}_{2,3}^{(c)}(T_g,b) = \dfrac{\sqrt{3}\mathbb{Q}_{2,3}^{(a)}(T_g)\mathbb{Q}_0^{(b)}(A_g)}{3}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\qquad\qquad\qquad\quad + \dfrac{\sqrt{42}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(E_g)}{42} + \dfrac{\sqrt{14}\,\mathbb{Q}_{2,2}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,2}^{(b)}(E_g)}{14} + \dfrac{\sqrt{14}\,\mathbb{Q}_{2,3}^{(1,-1;a)}(T_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{14}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z241}} \quad \mathbb{Q}_{2,1}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{2,1}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z242}} \quad \mathbb{Q}_{2,2}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{2,2}^{(b)}(T_g)}{3}$$

$$\boxed{\text{z243}} \quad \mathbb{Q}_{2,3}^{(1,1;c)}(T_g,a) = \frac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{2,3}^{(b)}(T_g)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z399}} \quad \mathbb{Q}_{3,3}^{(c)}(T_u,1a) = \frac{\sqrt{3}\mathbb{Q}_0^{(a)}(A_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z412}} \quad \mathbb{Q}_{3,1}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z413}} \quad \mathbb{Q}_{3,2}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z414}} \quad \mathbb{Q}_{3,3}^{(c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{1,3}^{(a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

$\boxed{\text{z427}}$ $\quad \mathbb{Q}_{1,1}^{(1,-1;c)}(T_u,c) = \dfrac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_3^{(b)}(A_u)}{3}$

$\boxed{\text{z428}}$ $\quad \mathbb{Q}_{1,2}^{(1,-1;c)}(T_u,c) = \dfrac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_3^{(b)}(A_u)}{3}$

$\boxed{\text{z429}}$ $\quad \mathbb{Q}_{1,3}^{(1,-1;c)}(T_u,c) = \dfrac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_3^{(b)}(A_u)}{3}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\text{z457}} \quad \mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z458}} \quad \mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z459}} \quad \mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2c) = -\frac{\sqrt{3}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_3^{(b)}(A_u)}{3}$$

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

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

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

$$\boxed{\text{z463}} \quad \mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_3^{(1,-1;a)}(A_g)\mathbb{T}_{1,1}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z464}} \quad \mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,3}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,3}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_3^{(1,-1;a)}(A_g)\mathbb{T}_{1,2}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z465}} \quad \mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2e) = \frac{\sqrt{15}\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_{3,1}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,2}^{(b)}(T_u)}{12} + \frac{\sqrt{15}\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,1)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} - \frac{\mathbb{M}_{3,2}^{(1,-1;a)}(T_g,2)\mathbb{T}_{1,1}^{(b)}(T_u)}{12} + \frac{\mathbb{M}_3^{(1,-1;a)}(A_g)\mathbb{T}_{1,3}^{(b)}(T_u)}{3}$$

$$\boxed{\text{z466}} \quad \mathbb{Q}_{3,1}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,1}^{(1,-1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z467}} \quad \mathbb{Q}_{3,2}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,2}^{(1,-1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

$$\boxed{\text{z468}} \quad \mathbb{Q}_{3,3}^{(1,-1;c)}(T_u,2f) = -\frac{\sqrt{3}\mathbb{M}_{1,3}^{(1,-1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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$$\boxed{\text{z483}} \quad \mathbb{Q}_{1,3}^{(1,0;c)}(T_u,b) = \frac{\sqrt{3}\mathbb{T}_{2,3}^{(1,0;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\boxed{\text{z514}}$ $\mathbb{Q}_{3,1}^{(1,1;c)}(T_u,1) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{3,1}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z515}}$ $\mathbb{Q}_{3,2}^{(1,1;c)}(T_u,1) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{3,2}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z516}}$ $\mathbb{Q}_{3,3}^{(1,1;c)}(T_u,1) = \dfrac{\sqrt{3}\mathbb{Q}_0^{(1,1;a)}(A_g)\mathbb{Q}_{3,3}^{(b)}(T_u,1)}{3}$

$\boxed{\text{z517}}$ $\mathbb{Q}_{3,1}^{(1,1;c)}(T_u,2a) = -\dfrac{\sqrt{3}\mathbb{M}_{1,1}^{(1,1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$

$\boxed{\text{z518}}$ $\mathbb{Q}_{3,2}^{(1,1;c)}(T_u,2a) = -\dfrac{\sqrt{3}\mathbb{M}_{1,2}^{(1,1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$

$\boxed{\text{z519}}$ $\mathbb{Q}_{3,3}^{(1,1;c)}(T_u,2a) = -\dfrac{\sqrt{3}\mathbb{M}_{1,3}^{(1,1;a)}(T_g)\mathbb{T}_3^{(b)}(A_u)}{3}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\boxed{\text{x1}}$ $\quad \mathbb{Q}_0^{(a)}(A_g) = \begin{bmatrix} \frac{\sqrt{6}}{6} & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{6}}{6} & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{6}}{6} & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{6} & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{6} \end{bmatrix}$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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- Site cluster

** Wyckoff: `8b`

$\boxed{\text{y1}}$ $\quad \mathbb{Q}_0^{(s)}(A_g) = \left[\dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4} \right]$

$\boxed{\text{y2}}$ $\quad \mathbb{Q}_3^{(s)}(A_u) = \left[\dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, \dfrac{\sqrt{2}}{4}, -\dfrac{\sqrt{2}}{4}, -\dfrac{\sqrt{2}}{4}, -\dfrac{\sqrt{2}}{4}, -\dfrac{\sqrt{2}}{4} \right]$

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

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

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

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

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

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

- Bond cluster

** Wyckoff: `12b@12c`

$\boxed{\text{y9}}$ $\quad \mathbb{Q}_0^{(s)}(A_g) = \left[\dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6}, \dfrac{\sqrt{3}}{6} \right]$

$\boxed{\text{y10}}$ $\quad \mathbb{T}_3^{(s)}(A_u) = \left[\dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6}, \dfrac{\sqrt{3}i}{6} \right]$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

━━ **Site and Bond** ━━

Table 4: Orbital of each site

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

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 (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]

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, $|v|= 2.0$ (cartesian)

SL	vector (v)	center (c)	mapping	head	tail	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]