Note: A square-root sign is to be understood over *every* coefficient, *e.g.*, for −8/15 read $-\sqrt{8/15}$.

Notation:

	J	J	…
	M	M	…
m_1 m_2	Coefficients		
m_1 m_2			
⋮ ⋮			

$$Y_1^0 = \sqrt{\frac{3}{4\pi}}\cos\theta$$

$$Y_1^1 = -\sqrt{\frac{3}{8\pi}}\,\sin\theta\, e^{i\phi}$$

$$Y_2^0 = \sqrt{\frac{5}{4\pi}}\left(\frac{3}{2}\cos^2\theta - \frac{1}{2}\right)$$

$$Y_2^1 = -\sqrt{\frac{15}{8\pi}}\,\sin\theta\cos\theta\, e^{i\phi}$$

$$Y_2^2 = \frac{1}{4}\sqrt{\frac{15}{2\pi}}\,\sin^2\theta\, e^{2i\phi}$$

$$Y_\ell^{-m} = (-1)^m Y_\ell^{m*}$$

$$\langle j_1 j_2 m_1 m_2 | j_1 j_2 J M\rangle = (-1)^{J-j_1-j_2}\langle j_2 j_1 m_2 m_1 | j_2 j_1 J M\rangle$$

1/2×1/2

m_1	m_2	J=1 M=+1
+1/2	+1/2	1

m_1	m_2	J=1 M=0	J=0 M=0
+1/2	−1/2	1/2	1/2
−1/2	+1/2	1/2	−1/2

m_1	m_2	J=1 M=−1
−1/2	−1/2	1

1×1/2

m_1	m_2	J=3/2 M=+3/2
+1	+1/2	1

m_1	m_2	J=3/2 M=+1/2	J=1/2 M=+1/2
+1	−1/2	1/3	2/3
0	+1/2	2/3	−1/3

m_1	m_2	J=3/2 M=−1/2	J=1/2 M=−1/2
0	−1/2	2/3	1/3
−1	+1/2	1/3	−2/3

m_1	m_2	J=3/2 M=−3/2
−1	−1/2	1

2×1/2

m_1	m_2	J=5/2 M=+5/2
+2	+1/2	1

m_1	m_2	J=5/2 M=+3/2	J=3/2 M=+3/2
+2	−1/2	1/5	4/5
+1	+1/2	4/5	−1/5

m_1	m_2	J=5/2 M=+1/2	J=3/2 M=+1/2
+1	−1/2	2/5	3/5
0	+1/2	3/5	−2/5

m_1	m_2	J=5/2 M=−1/2	J=3/2 M=−1/2
0	−1/2	3/5	2/5
−1	+1/2	2/5	−3/5

m_1	m_2	J=5/2 M=−3/2	J=3/2 M=−3/2
−1	−1/2	4/5	1/5
−2	+1/2	1/5	−4/5

m_1	m_2	J=5/2 M=−5/2
−2	−1/2	1

3/2×1/2

m_1	m_2	J=2 M=+2
+3/2	+1/2	1

m_1	m_2	J=2 M=+1	J=1 M=+1
+3/2	−1/2	1/4	3/4
+1/2	+1/2	3/4	−1/4

m_1	m_2	J=2 M=0	J=1 M=0
+1/2	−1/2	1/2	1/2
−1/2	+1/2	1/2	−1/2

m_1	m_2	J=2 M=−1	J=1 M=−1
−1/2	−1/2	3/4	1/4
−3/2	+1/2	1/4	−3/4

m_1	m_2	J=2 M=−2
−3/2	−1/2	1

2×1

m_1	m_2	J=3 M=+3
+2	+1	1

m_1	m_2	J=3 M=+2	J=2 M=+2
+2	0	1/3	2/3
+1	+1	2/3	−1/3

m_1	m_2	J=3 M=+1	J=2 M=+1	J=1 M=+1
+2	−1	1/15	1/3	3/5
+1	0	8/15	1/6	−3/10
0	+1	2/5	−1/2	1/10

m_1	m_2	J=3 M=0	J=2 M=0	J=1 M=0
+1	−1	1/5	1/2	3/10
0	0	3/5	0	−2/5
−1	+1	1/5	−1/2	3/10

m_1	m_2	J=3 M=−1	J=2 M=−1	J=1 M=−1
0	−1	2/5	1/2	1/10
−1	0	8/15	−1/6	−3/10
−2	+1	1/15	−1/3	3/5

m_1	m_2	J=3 M=−2	J=2 M=−2
−1	−1	2/3	1/3
−2	0	1/3	−2/3

m_1	m_2	J=3 M=−3
−2	−1	1

3/2×1

m_1	m_2	J=5/2 M=+5/2
+3/2	+1	1

m_1	m_2	J=5/2 M=+3/2	J=3/2 M=+3/2
+3/2	0	2/5	3/5
+1/2	+1	3/5	−2/5

m_1	m_2	J=5/2 M=+1/2	J=3/2 M=+1/2	J=1/2 M=+1/2
+3/2	−1	1/10	2/5	1/2
+1/2	0	3/5	1/15	−1/3
−1/2	+1	3/10	−8/15	1/6

m_1	m_2	J=5/2 M=−1/2	J=3/2 M=−1/2	J=1/2 M=−1/2
+1/2	−1	3/10	8/15	1/6
−1/2	0	3/5	−1/15	−1/3
−3/2	+1	1/10	−2/5	1/2

m_1	m_2	J=5/2 M=−3/2	J=3/2 M=−3/2
−1/2	−1	3/5	2/5
−3/2	0	2/5	−3/5

m_1	m_2	J=5/2 M=−5/2
−3/2	−1	1

1×1

m_1	m_2	J=2 M=+2
+1	+1	1

m_1	m_2	J=2 M=+1	J=1 M=+1
+1	0	1/2	1/2
0	+1	1/2	−1/2

m_1	m_2	J=2 M=0	J=1 M=0	J=0 M=0
+1	−1	1/6	1/2	1/3
0	0	2/3	0	−1/3
−1	+1	1/6	−1/2	1/3

m_1	m_2	J=2 M=−1	J=1 M=−1
0	−1	1/2	1/2
−1	0	1/2	−1/2

m_1	m_2	J=2 M=−2
−1	−1	1

3/2×3/2

m_1	m_2	J=3 M=+3
+3/2	+3/2	1

m_1	m_2	J=3 M=+2	J=2 M=+2
+3/2	+1/2	1/2	1/2
+1/2	+3/2	1/2	−1/2

m_1	m_2	J=3 M=+1	J=2 M=+1	J=1 M=+1
+3/2	−1/2	1/5	1/2	3/10
+1/2	+1/2	3/5	0	−2/5
−1/2	+3/2	1/5	−1/2	3/10

m_1	m_2	J=3 M=0	J=2 M=0	J=1 M=0	J=0 M=0
+3/2	−3/2	1/20	1/4	9/20	1/4
+1/2	−1/2	9/20	1/4	−1/20	−1/4
−1/2	+1/2	9/20	−1/4	−1/20	1/4
−3/2	+3/2	1/20	−1/4	9/20	−1/4

m_1	m_2	J=3 M=−1	J=2 M=−1	J=1 M=−1
+1/2	−3/2	1/5	1/2	3/10
−1/2	−1/2	3/5	0	−2/5
−3/2	+1/2	1/5	−1/2	3/10

m_1	m_2	J=3 M=−2	J=2 M=−2
−1/2	−3/2	1/2	1/2
−3/2	−1/2	1/2	−1/2

m_1	m_2	J=3 M=−3
−3/2	−3/2	1

2×3/2

m_1	m_2	J=7/2 M=+7/2
+2	+3/2	1

m_1	m_2	J=7/2 M=+5/2	J=5/2 M=+5/2
+2	+1/2	3/7	4/7
+1	+3/2	4/7	−3/7

m_1	m_2	J=7/2 M=+3/2	J=5/2 M=+3/2	J=3/2 M=+3/2
+2	−1/2	1/7	16/35	2/5
+1	+1/2	4/7	1/35	−2/5
0	+3/2	2/7	−18/35	1/5

m_1	m_2	J=7/2 M=+1/2	J=5/2 M=+1/2	J=3/2 M=+1/2	J=1/2 M=+1/2
+2	−3/2	1/35	6/35	2/5	2/5
+1	−1/2	12/35	5/14	0	−3/10
0	+1/2	18/35	−3/35	−1/5	1/5
−1	+3/2	4/35	−27/70	2/5	−1/10

m_1	m_2	J=7/2 M=−1/2	J=5/2 M=−1/2	J=3/2 M=−1/2	J=1/2 M=−1/2
+1	−3/2	4/35	27/70	2/5	1/10
0	−1/2	18/35	3/35	−1/5	−1/5
−1	+1/2	12/35	−5/14	0	3/10
−2	+3/2	1/35	−6/35	2/5	−2/5

m_1	m_2	J=7/2 M=−3/2	J=5/2 M=−3/2	J=3/2 M=−3/2
0	−3/2	2/7	18/35	1/5
−1	−1/2	4/7	−1/35	−2/5
−2	+1/2	1/7	−16/35	2/5

m_1	m_2	J=7/2 M=−5/2	J=5/2 M=−5/2
−1	−3/2	4/7	3/7
−2	−1/2	3/7	−4/7

m_1	m_2	J=7/2 M=−7/2
−2	−3/2	1

2×2

m_1	m_2	J=4 M=+4
+2	+2	1

m_1	m_2	J=4 M=+3	J=3 M=+3
+2	+1	1/2	1/2
+1	+2	1/2	−1/2

m_1	m_2	J=4 M=+2	J=3 M=+2	J=2 M=+2
+2	0	3/14	1/2	2/7
+1	+1	4/7	0	−3/7
0	+2	3/14	−1/2	2/7

m_1	m_2	J=4 M=+1	J=3 M=+1	J=2 M=+1	J=1 M=+1
+2	−1	1/14	3/10	3/7	1/5
+1	0	3/7	1/5	−1/14	−3/10
0	+1	3/7	−1/5	−1/14	3/10
−1	+2	1/14	−3/10	3/7	−1/5

m_1	m_2	J=4 M=0	J=3 M=0	J=2 M=0	J=1 M=0	J=0 M=0
+2	−2	1/70	1/10	2/7	2/5	1/5
+1	−1	8/35	2/5	1/14	−1/10	−1/5
0	0	18/35	0	−2/7	0	1/5
−1	+1	8/35	−2/5	1/14	1/10	−1/5
−2	+2	1/70	−1/10	2/7	−2/5	1/5

m_1	m_2	J=4 M=−1	J=3 M=−1	J=2 M=−1	J=1 M=−1
+1	−2	1/14	3/10	3/7	1/5
0	−1	3/7	1/5	−1/14	−3/10
−1	0	3/7	−1/5	−1/14	3/10
−2	+1	1/14	−3/10	3/7	−1/5

m_1	m_2	J=4 M=−2	J=3 M=−2	J=2 M=−2
0	−2	3/14	1/2	2/7
−1	−1	4/7	0	−3/7
−2	0	3/14	−1/2	2/7

m_1	m_2	J=4 M=−3	J=3 M=−3
−1	−2	1/2	1/2
−2	−1	1/2	−1/2

m_1	m_2	J=4 M=−4
−2	−2	1