$SU(2)$ Clebsch-Gordan mikael.mieskolainen@cern.ch $j_1j_2m_1m_2 angle\equiv j_1m_1 angle\otimes j_2m_2 angle$	Table 1: $[j_1 \otimes j_2 = 1/2 \otimes 1/2]$ $\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$JM\rangle = \sum_{-j_1 \le m_1 \le j_1} \sum_{-j_2 \le m_2 \le j_2} j_1 j_2 m_1 m_2\rangle \langle j_1 j_2 m_1 m_2 (j_1 j_2) J.$ $j_1 j_2 m_1 m_2\rangle = \sum_{J} \sum_{-J \le M \le J} JM\rangle \langle (j_1 j_2) JM j_1 j_2 m_1 m_2\rangle$	
	Table 3: $[j_1 \otimes j_2 = 1 \otimes 1]$ $\begin{array}{c c c c c c c c c c c c c c c c c c c $
	Table 4: $ [j_1 \otimes j_2 = 3/2 \otimes 1/2] $ $ \begin{array}{ c c c c c c c }\hline & \frac{m_1}{1} & \frac{m_2}{3/2} & \frac{J}{1} & \frac{M}{1} & \frac{\langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle}{1} \\\hline 1 & -3/2 & -1/2 & 2 & -2 & 1 \\\hline 2 & -3/2 & 1/2 & 1 & -1 & -\sqrt{3/4} \\\hline 3 & -3/2 & 1/2 & 2 & -1 & \sqrt{1/4} \\\hline 4 & -1/2 & -1/2 & 1 & -1 & \sqrt{1/4} \\\hline 5 & -1/2 & -1/2 & 2 & -1 & \sqrt{3/4} \\\hline 6 & -1/2 & 1/2 & 1 & 0 & -\sqrt{1/2} \\\hline 7 & -1/2 & 1/2 & 2 & 0 & \sqrt{1/2} \\\hline 8 & 1/2 & -1/2 & 1 & 0 & \sqrt{1/2} \\\hline 9 & 1/2 & -1/2 & 2 & 0 & \sqrt{1/2} \\\hline 9 & 1/2 & -1/2 & 2 & 0 & \sqrt{1/2} \\\hline 10 & 1/2 & 1/2 & 1 & 1 & -\sqrt{1/4} \\\hline 11 & 1/2 & 1/2 & 2 & 1 & \sqrt{3/4} \\\hline 12 & 3/2 & -1/2 & 1 & 1 & \sqrt{3/4} \\\hline 13 & 3/2 & -1/2 & 2 & 1 & \sqrt{1/4} \\\hline 14 & 3/2 & 1/2 & 2 & 2 & 1 & 1 \end{array} $
	Table 5: $\left[j_1 \otimes j_2 = 3/2 \otimes 1\right]$ $\begin{array}{ c c c c c c c c }\hline & m_1 & m_2 & J & M & \langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle \\\hline 1 & -3/2 & -1 & 5/2 & -5/2 & 1 \\\hline 2 & -3/2 & 0 & 3/2 & -3/2 & -\sqrt{3/5} \\ 3 & -3/2 & 0 & 5/2 & -3/2 & \sqrt{2/5} \\ 4 & -3/2 & 1 & 1/2 & -1/2 & \sqrt{1/2} \\ 5 & -3/2 & 1 & 3/2 & -1/2 & -\sqrt{2/5} \\ 6 & -3/2 & 1 & 5/2 & -1/2 & \sqrt{1/10} \\ 7 & -1/2 & -1 & 3/2 & -3/2 & \sqrt{2/5} \\ 8 & -1/2 & -1 & 5/2 & -3/2 & \sqrt{3/5} \\ 9 & -1/2 & 0 & 1/2 & -1/2 & -\sqrt{1/3} \\ 10 & -1/2 & 0 & 3/2 & -1/2 & -\sqrt{1/13} \\ 11 & -1/2 & 0 & 5/2 & -1/2 & \sqrt{3/5} \\ 12 & -1/2 & 1 & 1/2 & 1/2 & \sqrt{1/6} \\ 13 & -1/2 & 1 & 3/2 & 1/2 & -\sqrt{8/15} \\ 14 & -1/2 & 1 & 5/2 & 1/2 & \sqrt{3/10} \\ 15 & 1/2 & -1 & 1/2 & -1/2 & \sqrt{1/6} \\ 16 & 1/2 & -1 & 3/2 & -1/2 & \sqrt{8/15} \\ 17 & 1/2 & -1 & 5/2 & -1/2 & \sqrt{3/10} \\ 18 & 1/2 & 0 & 1/2 & 1/2 & -\sqrt{1/3} \\ 19 & 1/2 & 0 & 3/2 & 1/2 & -\sqrt{1/3} \\ 19 & 1/2 & 0 & 3/2 & 1/2 & -\sqrt{1/3} \\ 19 & 1/2 & 0 & 3/2 & 1/2 & -\sqrt{1/3} \\ 20 & 1/2 & 0 & 5/2 & 1/2 & \sqrt{3/10} \\ 18 & 1/2 & 0 & 1/2 & 1/2 & -\sqrt{1/3} \\ 21 & 1/2 & 1 & 3/2 & 3/2 & -\sqrt{2/5} \\ 22 & 1/2 & 1 & 5/2 & 3/2 & \sqrt{3/5} \\ 23 & 3/2 & -1 & 1/2 & 1/2 & \sqrt{1/15} \\ 26 & 3/2 & 0 & 3/2 & 3/2 & \sqrt{3/5} \\ 27 & 3/2 & 0 & 5/2 & 3/2 & \sqrt{2/5} \\ 28 & 3/2 & 1 & 5/2 & 5/2 & 1 & \\ \end{array}$
	Table 6: $[j_1 \otimes j_2 = 3/2 \otimes 3/2]$ $\begin{array}{ c c c c c c c c c c c c c c c c c c c$
	Table 7: $\left[j_1 \otimes j_2 = 2 \otimes 1/2\right]$ $\begin{array}{ c c c c c c c c }\hline & \frac{m_1}{1} & \frac{m_2}{2} & \frac{J}{1} & \frac{M}{2} & \frac{\langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle}{1} \\\hline 1 & -2 & -1/2 & 5/2 & -5/2 & 1\\ 2 & -2 & 1/2 & 3/2 & -3/2 & -\sqrt{4/5}\\ 3 & -2 & 1/2 & 5/2 & -3/2 & \sqrt{1/5}\\ 4 & -1 & -1/2 & 3/2 & -3/2 & \sqrt{1/5}\\ 5 & -1 & -1/2 & 5/2 & -3/2 & \sqrt{4/5}\\ 6 & -1 & 1/2 & 3/2 & -1/2 & -\sqrt{3/5}\\ 7 & -1 & 1/2 & 5/2 & -1/2 & \sqrt{2/5}\\ 8 & 0 & -1/2 & 3/2 & -1/2 & \sqrt{2/5}\\ 9 & 0 & -1/2 & 5/2 & -1/2 & \sqrt{2/5}\\ 9 & 0 & -1/2 & 5/2 & -1/2 & \sqrt{3/5}\\ 10 & 0 & 1/2 & 3/2 & 1/2 & -\sqrt{2/5}\\ 11 & 0 & 1/2 & 5/2 & 1/2 & \sqrt{3/5}\\ 12 & 1 & -1/2 & 3/2 & 1/2 & \sqrt{3/5}\\ 13 & 1 & -1/2 & 5/2 & 1/2 & \sqrt{3/5}\\ 13 & 1 & -1/2 & 5/2 & 1/2 & \sqrt{2/5}\\ 14 & 1 & 1/2 & 3/2 & 3/2 & -\sqrt{1/5}\\ 15 & 1 & 1/2 & 5/2 & 3/2 & \sqrt{4/5}\\ 16 & 2 & -1/2 & 3/2 & 3/2 & \sqrt{4/5}\\ 17 & 2 & -1/2 & 5/2 & 3/2 & \sqrt{4/5}\\ 17 & 2 & -1/2 & 5/2 & 3/2 & \sqrt{4/5}\\ 18 & 2 & 1/2 & 5/2 & 5/2 & 1\end{array}$
	Table 8: $[j_1 \otimes j_2 = 2 \otimes 1]$ $\begin{array}{ c c c c c c c c }\hline & \frac{m_1}{1} & \frac{m_2}{2} & \frac{J}{1} & \frac{M}{3} & \frac{\langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle}{1} \\\hline 1 & -2 & -1 & 3 & -3 & 1 & 1\\\hline 2 & -2 & 0 & 2 & -2 & -\sqrt{2/3} \\ 3 & -2 & 0 & 3 & -2 & \sqrt{1/3} \\ 4 & -2 & 1 & 1 & -1 & \sqrt{3/5} \\ 5 & -2 & 1 & 2 & -1 & -\sqrt{1/3} \\ 6 & -2 & 1 & 3 & -1 & \sqrt{1/15} \\ 7 & -1 & -1 & 2 & -2 & \sqrt{1/3} \\ 8 & -1 & -1 & 3 & -2 & \sqrt{2/3} \\ 9 & -1 & 0 & 1 & -1 & -\sqrt{3/10} \\ 10 & -1 & 0 & 2 & -1 & -\sqrt{1/6} \\ 11 & -1 & 0 & 3 & -1 & \sqrt{8/15} \\ 12 & -1 & 1 & 1 & 0 & \sqrt{3/10} \\ 13 & -1 & 1 & 2 & 0 & -\sqrt{1/2} \\ 14 & -1 & 1 & 3 & 0 & \sqrt{1/5} \\ 15 & 0 & -1 & 1 & -1 & \sqrt{1/10} \\ 16 & 0 & -1 & 2 & -1 & \sqrt{1/10} \\ 16 & 0 & -1 & 2 & -1 & \sqrt{1/10} \\ 16 & 0 & -1 & 2 & -1 & \sqrt{1/10} \\ 16 & 0 & -1 & 3 & -1 & \sqrt{2/5} \\ 19 & 0 & 0 & 3 & 0 & \sqrt{3/5} \\ 20 & 0 & 1 & 1 & 1 & \sqrt{1/10} \\ 21 & 0 & 1 & 2 & 1 & -\sqrt{1/2} \\ 22 & 0 & 1 & 3 & 1 & \sqrt{2/5} \\ 23 & 1 & -1 & 1 & 0 & \sqrt{3/10} \\ 24 & 1 & -1 & 2 & 0 & \sqrt{1/2} \\ 25 & 1 & -1 & 3 & 0 & \sqrt{1/5} \\ 26 & 1 & 0 & 1 & 1 & -\sqrt{3/10} \\ 27 & 1 & 0 & 2 & 1 & \sqrt{1/6} \\ 28 & 1 & 0 & 3 & 1 & \sqrt{8/15} \\ 29 & 1 & 1 & 2 & 2 & -\sqrt{1/3} \\ 30 & 1 & 1 & 3 & 2 & \sqrt{2/3} \\ 31 & 2 & -1 & 1 & 1 & \sqrt{3/5} \\ 32 & 2 & -1 & 2 & 1 & \sqrt{1/3} \\ 33 & 2 & -1 & 3 & 1 & \sqrt{1/15} \\ 34 & 2 & 0 & 2 & 2 & \sqrt{2/3} \\ 35 & 2 & 0 & 3 & 2 & \sqrt{1/3} \\ 36 & 2 & 1 & 3 & 3 & 1 \\ \end{array}$
	Table 9: $[j_1 \otimes j_2 = 2 \otimes 3/2]$ $\begin{array}{ c c c c c c c c c c c c c c c c c c c$
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
	Table 11: $ [j_1 \otimes j_2 = 5/2 \otimes 1/2] $ $ \begin{array}{ c c c c c c c c }\hline & m_1 & m_2 & J & M & \langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle \\\hline & 1 & -5/2 & -1/2 & 3 & -3 & 1 \\ 2 & -5/2 & 1/2 & 2 & -2 & \sqrt{1/6} \\ 3 & -5/2 & 1/2 & 3 & -2 & \sqrt{1/6} \\ 4 & -3/2 & -1/2 & 2 & -2 & \sqrt{1/6} \\ 5 & -3/2 & -1/2 & 3 & -2 & \sqrt{5/6} \\ 6 & -3/2 & 1/2 & 2 & -1 & -\sqrt{2/3} \\ 7 & -3/2 & 1/2 & 3 & -1 & \sqrt{1/3} \\ 8 & -1/2 & -1/2 & 2 & -1 & \sqrt{1/3} \\ 9 & -1/2 & -1/2 & 3 & -1 & \sqrt{1/3} \\ 9 & -1/2 & 1/2 & 2 & 0 & -\sqrt{1/2} \\ 11 & -1/2 & 1/2 & 3 & 0 & \sqrt{1/2} \\ 12 & 1/2 & -1/2 & 3 & 0 & \sqrt{1/2} \\ 12 & 1/2 & -1/2 & 3 & 0 & \sqrt{1/2} \\ 13 & 1/2 & -1/2 & 3 & 0 & \sqrt{1/2} \\ 14 & 1/2 & 1/2 & 2 & 1 & -\sqrt{1/3} \\ 15 & 1/2 & 1/2 & 3 & 1 & \sqrt{2/3} \\ 16 & 3/2 & -1/2 & 2 & 1 & -\sqrt{1/3} \\ 17 & 3/2 & -1/2 & 3 & 1 & \sqrt{2/3} \\ 18 & 3/2 & 1/2 & 2 & 2 & -\sqrt{1/6} \\ 19 & 3/2 & 1/2 & 3 & 2 & \sqrt{5/6} \\ 20 & 5/2 & -1/2 & 2 & 2 & \sqrt{5/6} \\ 21 & 5/2 & -1/2 & 3 & 2 & \sqrt{1/6} \\ 22 & 5/2 & 1/2 & 3 & 2 & \sqrt{1/6} \\ 22 & 5/2 & 1/2 & 3 & 2 & \sqrt{1/6} \\ \end{array} $
	Table 12: $[j_1 \otimes j_2 = 5/2 \otimes 1]$ $\begin{array}{ c c c c c c c c }\hline & \frac{m_1}{1} & \frac{m_2}{7} & J & M & \langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle \\\hline 1 & -5/2 & -1 & 7/2 & -7/2 & 1 \\\hline 2 & -5/2 & 0 & 5/2 & -5/2 & -\sqrt{5/7} \\\hline 3 & -5/2 & 0 & 7/2 & -5/2 & \sqrt{2/7} \\\hline 4 & -5/2 & 1 & 3/2 & -3/2 & \sqrt{2/3} \\\hline 5 & -5/2 & 1 & 5/2 & -3/2 & \sqrt{2/7} \\\hline 6 & -5/2 & 1 & 5/2 & -5/2 & \sqrt{2/7} \\\hline 6 & -5/2 & 1 & 7/2 & -3/2 & \sqrt{2/7} \\\hline 7 & -3/2 & -1 & 5/2 & -5/2 & \sqrt{2/7} \\\hline 8 & -3/2 & -1 & 7/2 & -5/2 & \sqrt{5/7} \\\hline 9 & -3/2 & 0 & 3/2 & -3/2 & -\sqrt{4/15} \\\hline 10 & -3/2 & 0 & 5/2 & -3/2 & -\sqrt{4/15} \\\hline 10 & -3/2 & 0 & 5/2 & -3/2 & -\sqrt{9/35} \\\hline 11 & -3/2 & 1 & 3/2 & -1/2 & \sqrt{2/5} \\\hline 13 & -3/2 & 1 & 3/2 & -1/2 & \sqrt{1/7} \\\hline 14 & -3/2 & 1 & 7/2 & -1/2 & \sqrt{1/7} \\\hline 15 & -1/2 & -1 & 3/2 & -3/2 & \sqrt{1/15} \\\hline 16 & -1/2 & -1 & 5/2 & -3/2 & \sqrt{1/15} \\\hline 17 & -1/2 & -1 & 5/2 & -3/2 & \sqrt{1/15} \\\hline 19 & -1/2 & 0 & 3/2 & -1/2 & \sqrt{2/5} \\\hline 19 & -1/2 & 0 & 5/2 & -1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 0 & 5/2 & -1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 1 & 3/2 & 1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 1 & 3/2 & 1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 1 & 3/2 & 1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 1 & 5/2 & 1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 0 & 5/2 & -1/2 & -\sqrt{1/35} \\\hline 20 & -1/2 & 1 & 3/2 & 1/2 & -\sqrt{1/5} \\\hline 22 & -1/2 & 1 & 5/2 & 1/2 & -\sqrt{1/35} \\\hline 23 & -1/2 & 1 & 5/2 & 1/2 & -\sqrt{1/5} \\\hline 24 & 1/2 & -1 & 3/2 & -1/2 & \sqrt{2/7} \\\hline 27 & 1/2 & 0 & 3/2 & 1/2 & -\sqrt{2/5} \\\hline 28 & 1/2 & -1 & 5/2 & -1/2 & \sqrt{1/5} \\\hline 29 & 1/2 & 0 & 7/2 & 1/2 & \sqrt{1/5} \\\hline 31 & 1/2 & 1 & 3/2 & 3/2 & -\sqrt{1/15} \\\hline 31 & 1/2 & 1 & 3/2 & 3/2 & -\sqrt{1/15} \\\hline 31 & 1/2 & 1 & 3/2 & 3/2 & -\sqrt{1/15} \\\hline 31 & 1/2 & 1 & 3/2 & 3/2 & -\sqrt{1/15} \\\hline 31 & 3/2 & -1 & 5/2 & 1/2 & \sqrt{1/5} \\\hline 34 & 3/2 & -1 & 5/2 & 1/2 & \sqrt{1/5} \\\hline 35 & 3/2 & -1 & 5/2 & 3/2 & \sqrt{1/15} \\\hline 37 & 3/2 & 0 & 5/2 & 3/2 & \sqrt{1/15} \\\hline 39 & 3/2 & 1 & 5/2 & 3/2 & \sqrt{1/15} \\\hline 30 & 3/2 & 1 & 5/2 & 3/2 & \sqrt{1/15} \\\hline 31 & 3/2 & -1 & 5/2 & 1/2 & \sqrt{1/15} \\\hline 32 & 1/2 & 1 & 7/2 & 1/2 & \sqrt{1/15} \\\hline 34 & 3/2 & -1 & 5/2 & 1/2 & \sqrt{1/15} \\\hline 37 & 3/2 & 0 & 5/2 & 3/2 & \sqrt{1/15} \\\hline 39 & 3/2 & 1 & 5/2 & 5/2 & \sqrt{5/7} \\\hline 40 & 3/2 & 1 & 5/2 & 5/2 & \sqrt{5/7} \\\hline 41 & 5/2 $

 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_1}{-5/2}$ $\frac{m_2}{-3/2}$ $-\sqrt{5/8}$ 2 -5/2-1/23 -3 $\sqrt{3/8}$ 3 -5/2-1/2-34 $\sqrt{10/21}$ 4 -5/21/22 -2 $-\sqrt{5/12}$ 1/2-25 -5/23 Table 18: $[j_1 \otimes j_2 = 3 \otimes 3/2]$ $\sqrt{3/28}$ 6 -5/21/24 -2 $-\sqrt{1/2}$ 7 -5/23/2-1M $\frac{m_2}{-3/2}$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{5/14}$ -9/2-5/23/29/2 $-\sqrt{2/3}$ $-\sqrt{1/8}$ -1/27/22 -3-7/2-5/23/2 $\sqrt{1/3}$ $\sqrt{1/56}$ -13 -3-1/29/2-7/2-5/23/210 4 $\sqrt{3/8}$ $\sqrt{15/28}$ 4 -31/25/2-5/211 -3/2-3/23 -3 $\sqrt{5/8}$ $\sqrt{8/21}$ 7/2-3/21/2-5/2-3/212 4 -3 $\sqrt{1/12}$ $-\sqrt[1]{8/21}$ -5/21/29/213 -3/2-1/22 -2 $-\sqrt{4/7}$ $\sqrt{1/12}$ -33/23/2-3/214 -3/2-1/23 -2 $\sqrt{9/28}$ 3/25/2 -3/2 $\sqrt{15/28}$ 8 -315 -3/2-1/24 -2 $-\sqrt{2/21}$ $\sqrt{3/10}$ 9 -33/27/2-3/2-3/21/216 1 $\sqrt{1/84}$ $\sqrt{1/42}$ 9/2-33/2-3/2-3/21/22 10 17 $\sqrt{49/120}$ $\sqrt{1/3}$ -7/218 -3/21/2 3 -111 -2-3/27/2 $\sqrt{2/3}$ $\sqrt{15/56}$ 12 -2-3/29/2-7/2-3/21/219 4 -1 $-\sqrt{\frac{5}{14}}$ $-\sqrt{1/5}$ 13 -2-1/25/2-5/220 -3/23/21 0 $-\sqrt{\frac{1}{7}}$ $\sqrt{3/7}$ -5/2-1/27/221 -3/23/22 0 $-\sqrt{3/10}$ $\sqrt{\frac{1/2}{.}}$ 3/2-2-1/29/2-5/222 -3/23 0 $\sqrt{\frac{2/7}{2}}$ $\sqrt{1/14}$ -21/23/2 -3/216 23 -3/23/24 0 $\sqrt{1/14}$ $\sqrt{1/7}$ -21/2 5/2-3/217 24 -1/2-3/22 -2 $\sqrt{3/7}$ $\sqrt{1/2}$ 7/2 1/225 -1/2-218 -2-3/2-3/2 $\sqrt{3/14}$ $\sqrt{5/14}$ 1/219 -29/2-3/2-1/2-3/2 $-\sqrt{3/20}$ $-\sqrt{2/7}$ 20 -23/23/2-1/227 -1/2-1-1/21 $-\sqrt{25/84}$ $\sqrt{3/7}$ 21 -23/25/2-1/228 -1/2-1-1/2 $\sqrt{1/60}$ $\sqrt{5/21}$ 3/2 7/2-2-1/229 -1/2-1-1/23 $\sqrt{1/21}$ $\sqrt{15/28}$ 23 -23/29/2-1/2-130 -1/2-1/24 $\sqrt{3/28}$ $\sqrt{3/10}$ -3/25/2-5/231 -1/21/21 0 $-\sqrt{1/14}$ $\sqrt{10/21}$ -1-3/27/2-5/225 32 -1/21/22 0 $\sqrt{5/12}$ $-\sqrt{1/5}$ -1-3/29/2-5/226 -1/21/23 $-\sqrt{4/35}$ $\sqrt{3/7}$ 27 -1-1/23/2-3/2-1/21/234 4 $-\sqrt[4]{\frac{7}{20}}$ $-\sqrt{1/20}$ 35 -1/23/21 28 -1-1/25/2-3/2 $\sqrt{9/28}$ $\sqrt{15/28}$ 29 -1-1/29/2-3/2-1/23/2 2 1 36 $-\sqrt{\frac{9/20}{}}$ $\sqrt{12/35}$ 30 -11/23/2-1/23/237 -1/23 1 $-\sqrt{\frac{1}{70}}$ $\sqrt{5/28}$ 1/25/2-1/231 -1-1/23/21 38 4 $-\sqrt{\frac{2}{7}}$ $\sqrt{1/20}$ 32 -11/27/2-1/21/239 -3/21 -1 $\sqrt{5/14}$ $\sqrt{9/28}$ 1/29/2-1/233 -140 1/2-3/22 -1 $-\sqrt{\frac{4}{35}}$ $\sqrt{9/20}$ 1/23/23/234 -141 1/2-3/23 -1 $\sqrt{27/70}$ $\sqrt{5/28}$ 1/2 5/2 1/2-3/235 -13/242 $-\sqrt{3/10}$ $-\sqrt{8/21}$ 1/236 -13/27/243 1/2-1/2 $-\sqrt{1/14}$ $\sqrt{5/42}$ 37 -13/29/21/21/2-1/22 0 44 $\sqrt{1/5}$ $\sqrt{1/35}$ 38 0 -3/23/2-3/21/2 -1/20 45 3 $\sqrt{3/7}$ $\sqrt{9/35}$ -3/25/2-3/21/2-1/20 46 4 $\sqrt{3/20}$ $\sqrt{10/21}$ 40 -3/27/2-3/247 1/21/21 1 $-\sqrt{25/84}$ $\sqrt{5/21}$ -3/29/2-3/248 1/21/22 1 $-\sqrt{9/35}$ $\sqrt{1/60}$ -1/23/2 -1/242 0 49 1/21/23 1 $-\sqrt{6/35}$ $\sqrt{15/28}$ 0 -1/25/2-1/243 1/21/21 50 4 $\sqrt{2/21}$ $\sqrt{1/7}$ -1/27/2-1/21/2 3/2 2 44 0 51 2 $\sqrt{1/2}$ $\sqrt{10/21}$ -1/21/2 3/2 3 2 45 0 9/2-1/2 $\sqrt{9/35}$ $\sqrt{5/14}$ 46 0 1/23/21/21/23/22 53 4 $-\sqrt{6/35}$ $\sqrt{1/5}$ 47 0 1/25/21/23/2 -3/21 0 54 $\sqrt{2/21}$ $\sqrt{3/7}$ 1/20 1/27/23/22 0 55 -3/2 $\sqrt{10/21}$ $\sqrt{3/10}$ 0 1/29/21/256 3/2-3/23 0 $\sqrt{\frac{1/35}{}}$ $\sqrt{1/14}$ 0 3/23/2 3/2 50 57 3/2-3/24 0 $\sqrt{9/35}$ $-\sqrt{3/10}$ 0 3/25/23/2 51 58 3/2-1/21 1 $\sqrt{10/21}$ $\sqrt{1/42}$ 7/22 52 0 3/23/23/2-1/2 $\sqrt{5/21}$ $\sqrt{49/120}$ 53 0 3/29/23/23/2-1/2 $\sqrt{4/35}$ $\sqrt{15/56}$ 54 1 -3/23/2-1/261 3/2-1/24 $-\sqrt{8/21}$ $\sqrt{27/70}$ 55 -3/25/2-1/262 3/2 1/2 56 -3/27/2 $\sqrt{\frac{8/21}{1}}$ 63 3/21/23 2 $\sqrt{1/12}$ $\sqrt{\frac{5/42}{1}}$ $\sqrt{15/28}$ -3/29/2-1/22 64 3/21/24 $-\sqrt{12/35}$ $-\sqrt{\frac{3/8}{}}$ 3/2 1/258 1 -1/265 3/23/23 3 $-\sqrt{1/70}$ $\sqrt{5/8}$ 1/2 59 1 -1/25/266 3/23/24 3 $\sqrt{2/7}$ $\sqrt{1/2}$ 7/21/2 60 1 -1/267 5/2-3/21 1 $\sqrt[5]{5/14}$ $\sqrt{\frac{5/14}{5}}$ -1/21/261 1 9/268 5/2-3/21 $\sqrt[.]{4/35}$ $\sqrt{1/8}$ 5/2-3/23 1 62 1 1/23/23/269 $\sqrt{\frac{7}{20}}$ $\sqrt{1/56}$ 63 1 1/25/23/25/2-3/270 4 1 $\sqrt{10/21}$ $\sqrt{15/28}$ 64 1 1/29/23/22 71 5/2-1/22 $\sqrt{\frac{3/28}{1}}$ $\sqrt{5/12}$ 5/265 1 3/25/25/2-1/23 2 72 $-\sqrt{\frac{10/21}{10}}$ $\sqrt{3/28}$ 66 1 3/27/25/22 73 5/2-1/24 $\sqrt{5/8}$ $\sqrt{5/12}$ 3/29/25/267 1 74 5/21/23 3 $\sqrt{3/8}$ $\sqrt{2/7}$ 2 3/21/2 68 -3/275 5/21/24 3 $\sqrt{3/7}$ 3/25/25/2 69 2 -3/21/2 $\sqrt{5/21}$ 70 2 -3/27/21/2 $\sqrt{1/21}$ 712 -3/29/21/2 $-\sqrt{\frac{2}{7}}$ 72 2 -1/23/23/2 $\sqrt{1/14}$ 73 2 -1/25/23/2 $\sqrt{\frac{3/7}{}}$ 74 2 -1/27/23/2 $\sqrt{3/14}$ 2 -1/29/2 75 3/2 $-\sqrt{5/14}$ 2 76 1/2 5/25/2 $\sqrt{1/7}$ 2 1/27/277 5/2 $\sqrt{1/2}$ 2 1/278 9/25/2 $-\sqrt{1/3}$ 79 2 3/27/27/2 $\sqrt{2/3}$ 80 2 3/29/27/2 $\sqrt{4/7}$ 81 3 -3/23/23/2 $\sqrt{9/28}$ 82 3 -3/25/23/2 $\sqrt{2/21}$ 83 3 -3/27/23/2 $\sqrt{1/84}$ 3 9/2 3/2 -3/284 $\sqrt{15/28}$ 3 5/25/2 -1/285 $\sqrt{8/21}$ Table 14: $[j_1 \otimes j_2 = 5/2 \otimes 2]$ 7/286 3 -1/25/2 $\sqrt{1/12}$ 87 3 -1/29/25/2 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{2/3}$ $\frac{m_1}{-5/2}$ 88 3 1/27/27/29/2 -9/2 $\sqrt[.]{1/3}$ $-\sqrt{\frac{5/9}{5}}$ 89 3 1/29/27/22 -5/2-17/2-7/23/2 $\sqrt{4/9}$ 3 -5/29/2-7/2-1 $\sqrt{\frac{5/14}{5}}$ 4 -5/20 5/2-5/2 $-\sqrt{\frac{10/21}{10}}$ 5 -5/27/2-5/20 $\sqrt{1/6}$ 6 -5/20 9/2-5/2 $-\sqrt{2/7}$ 7 -5/2-3/21 3/2 $\sqrt{3/7}$ -3/28 -5/21 5/2 $-\sqrt{5/21}$ 9 -5/21 7/2-3/2 $\sqrt{1/21}$ 10 -5/21 9/2-3/2 $\sqrt{1/3}$ 11 -5/22 1/2-1/2 $\sqrt{8/21}$ 12 -5/23/2-1/2 $\sqrt{3/14}$ 13 -5/25/2-1/2 $-\sqrt{4/63}$ 14 -5/22 7/2-1/2 $\sqrt{1/126}$ -5/22 15 9/2-1/2 $\sqrt{4/9}$ 7/216 -3/2-2-7/2 $\sqrt{5/9}$ 17 -3/2-29/2-7/2 $-\sqrt{3/7}$ 18 -3/25/2-5/2 $-\sqrt{\frac{1/63}{-1/63}}$ 19 -3/27/2-5/2-1 $\sqrt{5/9}$ -3/220 9/2-5/2 $\sqrt{12/35}$ 21 -3/20 3/2-3/2 $-\sqrt{\frac{1}{70}}$ 22 -3/2-3/20 5/2 $\sqrt{2/7}$ 23 -3/20 7/2-3/2 $\sqrt{5/14}$ -3/20 -3/224 9/2 $\sqrt{4/15}$ -1/225 -3/21/2 $\sqrt{2/105}$ 26 -3/21 3/2-1/2 $\sqrt{6/35}$ 27 -3/25/2-1/2 $\sqrt{121/315}$ 28 -3/27/2-1/2 $\sqrt{10/63}$ 29 -3/29/2-1/2 $\sqrt{1/15}$ 30 -3/21/21/2 $-\sqrt{32/105}$ 31 -3/22 3/21/2 $\sqrt{27/70}$ 2 32 -3/25/21/2 $-\sqrt{64/315}$ 2 7/233 -3/21/2Table 19: $[j_1 \otimes j_2 = 3 \otimes 2]$ $\sqrt{5/126}$ 34 -3/22 9/21/2 $\sqrt{3/14}$ 35 -1/2-25/2-5/2 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{32/63}$ 36 -1/2-27/2-5/2 $-\sqrt{3/5}$ 2 4 -3-1-4 $\sqrt{5/18}$ 37 -1/29/2-2-5/2 $\sqrt{2/5}$ $-\sqrt{\frac{9/35}{1}}$ 3 -3-15 -438 -1/2-13/2-3/2 $\sqrt{5/12}$ $-\sqrt{\frac{6/35}{}}$ 4 -30 3 -3-1/25/239 -1-3/2 $\sqrt{9/20}$ 5 -30 4 -3 $\sqrt{\frac{2/21}{-}}$ 40 -1/27/2-3/2-1 $\sqrt{2/15}$ 6 -3-1/2 $\sqrt{10/21}$ 41 9/2 -3/2 $-\sqrt{5/14}$ $\sqrt{1/5}$ -1/21/2-1/242 0 $\sqrt{\frac{5/12}{1}}$ $\sqrt{2/35}$ 8 3 3/2-1/243 -1/20 $\sqrt[\mathbf{v}]{\frac{27/140}{27/140}}$ $-\sqrt{8/35}$ 9 -31 4 -244 -1/20 5/2-1/2 $\sqrt{1/30}$ $-\sqrt{\frac{4/105}{105}}$ 10 1 5 -2-345 -1/20 7/2-1/2 $\sqrt{3/7}$ 2 $\sqrt{10/21}$ 11 -31 -1-1/246 9/2-1/2 $-\sqrt{\frac{5/14}{5}}$ $-\sqrt{2/15}$ 12 -32 2 -147 -1/21/21/2 $\dot{\sqrt{1/6}}$ $\sqrt{5/21}$ 13 -32 3 -148 -1/21 3/21/2 $-\sqrt{\frac{3}{70}}$ $-\sqrt{14/45}$ 14 -32 4 -1-1/27/249 1 1/2 $\sqrt{1/210}$ $\sqrt{20/63}$ 15 -32 5 -1-1/250 1 9/21/2 $\sqrt{\frac{2}{5}}$ 16 -24 -4 $-\sqrt{4/35}$ 51 -1/22 3/23/2 $\sqrt[.]{3/5}$ 17 -25 -4 $\sqrt{27/70}$ 52 -1/22 5/23/2 $-\sqrt{5/12}$ $-\sqrt{\frac{8/21}{2}}$ -2-318 -13 53 -1/22 7/23/2 $-\sqrt{1/20}$ -24 19 -1-3 $\sqrt{\frac{5/42}{-}}$ -1/22 9/23/254 $\sqrt{8/15}$ $\sqrt{\frac{4/35}{1}}$ 20 -2-15 -355 1/2-23/2-3/2 $\sqrt{5/14}$ $\sqrt{27/70}$ 21 -20 2 -21/2-25/2-3/256 $-\sqrt{\frac{12/35}{12}}$ $\sqrt{8/21}$ 22 -20 4 -21/2-27/2-3/2 $\sqrt[4]{3/10}$ 57 $\sqrt{5/42}$ 23 -20 5 -21/2 -3/258 -29/2 $-\sqrt{\frac{2}{7}}$ $-\sqrt{2/15}$ 24 -21/2-1/259 -11/2 $\sqrt{\frac{1/4}{1}}$ 25 -23 -1 $-\sqrt{5/21}$ 60 1/2-13/2-1/2 $-\sqrt[4]{\frac{7}{20}}$ -226 1 4 -1 $\sqrt{14/45}$ 61 1/2-17/2-1/2 $\sqrt{4/35}$ $\sqrt{20/63}$ 27 -21 5 -162 1/2 -19/2-1/2 $\sqrt{1/5}$ $\sqrt{1/7}$ -22 0 28 1 1/2 1/2 63 1/2 $-\sqrt{\frac{5/14}{5}}$ $-\sqrt{2/35}$ 29 -22 2 0 64 1/20 3/21/2 $\sqrt{\frac{1/3}{1}}$ $-\sqrt[8]{8/35}$ 30 -22 3 0 65 1/2 0 5/21/2 $-\sqrt{\frac{1}{7}}$ 31 -22 4 0 $\sqrt{4/105}$ 66 1/27/21/2 0 $\sqrt{1/42}$ -22 0 $\sqrt[4]{10/21}$ 32 5 1/267 1/20 9/2 $\sqrt{1/6}$ 33 -23 -3 $\sqrt{9/35}$ 68 1/23/23/2 $\sqrt{1/2}$ $-\sqrt{\frac{6/35}{6}}$ 34 -14 -369 1/25/23/2 $\sqrt[.]{1/3}$ $-\sqrt{\frac{2}{21}}$ 35 -1-25 -370 1/27/23/2 $-\sqrt{3/14}$ 2 -236 -1-1 $\sqrt{10/21}$ 711/29/23/2 $-\sqrt{1/4}$ $\sqrt{\frac{3/14}{}}$ 37 -1-13 -272 1/2 5/25/2 $\sqrt{1/28}$ $-\sqrt{\frac{32/63}{}}$ 38 -1-14 -273 1/22 7/25/2 $\sqrt{1/2}$ $\sqrt{\frac{5/18}{5}}$ -139 -15 -21/22 9/25/274 $\sqrt{6/35}$ $\sqrt[.]{1/15}$ 40 -10 1 -13/21/2-1/275 -2 $\sqrt{1/7}$ 41 -12 $\sqrt{32/105}$ 3/276 -23/2-1/2 $-\sqrt{\frac{3}{20}}$ 42 -13 -1 $\sqrt{27/70}$ 77 3/2-25/2-1/2 $-\sqrt{\frac{3}{28}}$ 0 43 -14 -1 $\sqrt{64/315}$ 78 3/2-27/2-1/2 $\sqrt{3/7}$ $\sqrt{5/126}$ 44 -10 5 -179 3/2-29/2-1/2 $-\sqrt{8/35}$ $-\sqrt{\frac{4}{15}}$ -10 45 1 1 3/280 1/21/2 $\sqrt{1/7}$ $-\sqrt{2/105}$ 46 -11 2 0 81 3/23/21/2 $\sqrt{\frac{1/30}{1/30}}$ $\sqrt{6/35}$ 47-11 3 0 82 3/2 -15/21/2 $-\sqrt{\frac{5/14}{5}}$ 48 -11 4 0 $\sqrt{121/315}$ 3/2-17/283 1/2 $\sqrt{5/21}$ 49 0 1 5 $\sqrt{10/63}$ 3/2-184 9/21/2 $\sqrt{1/35}$ $-\sqrt{12/35}$ 1 50 2 1 85 3/20 3/23/2 $-\sqrt{3/14}$ $-\sqrt{1/70}$ 51-12 2 1 86 3/20 5/23/2 $\sqrt{2/5}$ $\sqrt{\frac{2/7}{2}}$ 2 1 52 -13 87 3/20 7/23/2 $-\sqrt{2/7}$ $\sqrt[.]{5/14}$ 2 4 1 53 -13/29/23/288 0 $\sqrt{1/14}$ $-\sqrt{\frac{3}{7}}$ 54 -12 5 1 89 3/25/25/2 $\sqrt{1/14}$ 55 0 -22 -2 $\sqrt{1/63}$ 3/2 7/25/290 1 $\sqrt{1/3}$ $\sqrt{5/9}$ -256 0 3 -291 3/21 9/25/2 $\sqrt{3/7}$ -2-2 $-\sqrt{4/9}$ 57 0 4 3/22 7/27/2 $\sqrt[4]{1/6}$ 92 58 0 -25 -2 $\sqrt{5/9}$ 3/22 93 9/27/2 $-\sqrt{\frac{3/35}{5}}$ $\sqrt{1/3}$ 59 0 1 94 5/2-21/21/2 $-\sqrt{2/7}$ 0 2 60 -1-1 $\sqrt{8/21}$ -295 5/23/21/2 $-\sqrt{1/30}$ $\sqrt{3/14}$ 61 0 -13 -196 5/2-25/21/2 $\sqrt{3/14}$ $\sqrt{4/63}$ 0 -1-162 4 5/2-297 7/21/2 $\sqrt[.]{8/21}$ $\sqrt{1/126}$ 63 0 -15 -198 5/29/21/2 $\sqrt{9/35}$ 64 0 0 1 0 $\sqrt{\frac{2/7}{}}$ 99 5/2-13/23/2 $-\sqrt{4/15}$ $\sqrt[8]{3/7}$ 65 0 0 3 0 5/2 -1100 5/23/2 $\sqrt{10/21}$ 0 $\sqrt[5]{5/21}$ 66 0 0 5 5/2-17/2101 3/2 $-\sqrt{3/35}$ 67 0 1 1 $\dot{\sqrt{1/21}}$ 102 5/2-19/23/2 $\sqrt{2/7}$ 2 68 0 1 $\sqrt{5/14}$ 103 5/20 5/25/2 $-\sqrt{1/30}$ 69 0 3 1 1 $\sqrt{10/21}$ 1045/27/25/20 $-\sqrt{3/14}$ $\sqrt{\frac{1}{6}}$ 70 0 1 4 1 105 5/29/25/20 $\sqrt{8/21}$ $\sqrt{\frac{5/9}{5}}$ 71 0 1 5 1 106 5/27/27/2 $-\sqrt{1/14}$ $\sqrt{4/9}$ 2 2 72 0 2 107 5/2 9/27/2 $\sqrt[r]{1/3}$ 1 73 0 2 3 2 5/29/2108 9/2 $-\sqrt{3/7}$ 740 2 4 2 $\sqrt{1/6}$ 75 0 2 2 $\sqrt{\frac{1/35}{1}}$ 76 1 $\sqrt{3/14}$ 2 77 1 -2-1 $\sqrt{\frac{2}{5}}$ 78 1 -23 -1 $\sqrt{\frac{2}{7}}$ 79 1 4 -1-2 $\sqrt{\frac{1/14}{1}}$ 80 1 -25 -1 $-\sqrt{\frac{8/35}{5}}$ 81 1 1 0 $-\sqrt{\frac{1}{7}}$ 82 1 -12 0 $\sqrt{1/30}$ 0 83 1 3 $\sqrt[.5]{14}$ -184 1 4 0 $\sqrt{5/21}$ 85 1 -15 0 $\sqrt{6/35}$ 1 86 0 1 1 $-\sqrt{1/7}$ 1 0 2 1 87 $-\sqrt{3/20}$ 88 1 0 3 1 $\sqrt{3/28}$ 89 1 0 4 1 $\sqrt{\frac{3}{1}}$ Table 15: $[j_1 \otimes j_2 = 5/2 \otimes 5/2]$ 90 1 0 5 1 $\sqrt{3/14}$ 91 1 1 2 2 $-\sqrt{\frac{1}{4}}$ 1 $M = \langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_1}{-5/2}$ $-\sqrt{\frac{1/28}{1}}$ 5 -593 1 $-\sqrt{1/2}$ 2 -5/2-3/24 -4 $\sqrt{1/2}$ 94 1 1 5 $\sqrt{1/2}$ -5/2 $\sqrt[\mathbf{v}]{1/6}$ 3 -3/25 -4 $\sqrt[4]{5/18}$ 95 1 2 3 3 3 4 -5/2-1/2-3 $-\sqrt{1/2}$ 2 3 96 1 4 $-\sqrt{1/2}$ 5 -5/2-1/24 -3 $\sqrt{1/3}$ 97 1 2 5 3 $\sqrt{2/9}$ 6 -5/2-1/25 -3 $\sqrt[4]{1/7}$ $-\sqrt{5/28}$ 98 2 -21 0 7 -5/21/22 -2 $\sqrt{5/14}$ 99 2 -22 0 $\sqrt{5/12}$ 8 -5/21/23 -2 $\sqrt{\frac{1/3}{}}$ $-\sqrt{\frac{9/28}{2}}$ 100 2 3 9 -5/21/24 -2 $\sqrt{\frac{1/7}{}}$ 101 2 -24 0 $\sqrt{\frac{1/12}{1}}$ 10 -5/21/25 -2 $\sqrt{1/42}$ 102 2 -25 0 $\sqrt{\frac{1/7}{\pi}}$ 11 -5/23/2-11 $-\sqrt{\frac{2}{7}}$ 2 $-\sqrt{5/14}$ 103 -11 1 12 -5/23/22 -1 $\sqrt{1/4}$ 2 3 1 104 -1 $\sqrt{1/3}$ 3/2-1 $\sqrt{7/20}$ 13 -5/23 $-\sqrt{\frac{1}{7}}$ 105 2 -14 1 $\sqrt{4/35}$ 14 -5/23/24 -1106 2 -15 1 $\sqrt{1/42}$ 15 -5/23/25 -1 $\sqrt{5/14}$ $-\sqrt{1/6}$ 107 2 0 2 2 16 -5/25/20 0 $\sqrt{12/35}$ 108 2 0 4 2 $\sqrt{5/14}$ 17 -5/25/2 $\sqrt{3/10}$ 109 2 $-\sqrt{\frac{25/84}{}}$ 18 -5/25/2 $-\sqrt{\frac{5/12}{5}}$ 110 3 $\sqrt{5/36}$ 19 -5/25/23 0 $\sqrt{\frac{1/20}{1}}$ 111 2 1 4 3 $-\sqrt{1/28}$ 0 20 -5/25/24 $\sqrt[.]{8/15}$ 112 2 1 5 3 $\sqrt{1/252}$ 0 21 -5/25/25 $-\sqrt{2/5}$ 2 113 2 4 4 $\sqrt{1/2}$ 22 -3/2-5/24 -4 $\sqrt{3/5}$ $\sqrt[\mathbf{v}]{1/2}$ 114 2 2 5 4 23 -3/2-5/25 -4 $\sqrt{\frac{3/7}{}}$ $-\sqrt{\frac{4/9}{}}$ 1153 -21 1 24 -3/2-3/23 -3 $\sqrt{\frac{5/14}{5}}$ 116 3 -22 1 $\sqrt{5/9}$ 25 -3/2-3/2-35 $\sqrt{\frac{1/6}{}}$ 117 3 3 1 $\sqrt{9/28}$ 26 -3/2-1/22 -2 $\sqrt{\frac{3/70}{}}$ $-\sqrt{1/12}$ 118 3 -24 -3/2-1/23 -2 $\sqrt{1/210}$ 119 3 -25 1 $-\sqrt{5/28}$ -3/2-1/2-228 4 $\sqrt{5/14}$ 2 3 2 120 -1 $\sqrt{5/12}$ 29 -3/2-1/25 -2 $\sqrt{5/12}$ 2 3 $-\sqrt{8/35}$ 121 -13 -3/2-130 1/21 $\sqrt{27/140}$ 122 3 -14 2 $\sqrt{1/7}$ 31 -3/21/22 -1 $\sqrt{1/30}$ 2 123 3 -15 $\sqrt{1/30}$ 32 -3/21/23 -1 $\sqrt{5/12}$ 124 3 0 3 3 $-\sqrt{\frac{5/14}{1}}$ 33 -3/21/24 -1 $\sqrt{9/20}$ 125 3 0 4 3 $\sqrt{\frac{5/21}{c}}$ 34 -3/21/2 $\dot{\sqrt{2/15}}$ 126 $\sqrt{\frac{1/6}{1}}$ 35 -3/23/20 $\sqrt{3/5}$ 127 3 $-\sqrt{\frac{9/70}{1}}$ $\sqrt[\mathbf{v}]{2/5}$ 36 -3/23/20 1 3 4 $-\sqrt[4]{1/84}$ 128 1 5 2 0 37 -3/23/2129 3 $\sqrt{49/180}$ 0 38 -3/23/23 $-\sqrt{9/28}$ 39 -3/23/24 0 $\sqrt{25/252}$ 40 -3/23/25 0 $\sqrt{1/7}$ 41 -3/25/21 1 $-\sqrt{5/14}$ 42 -3/25/22 1 $\sqrt{1/3}$ 43 -3/25/23 1 $-\sqrt{1/7}$ 44 -3/25/24 $\sqrt{1/42}$ -3/21 45 5/25 $\sqrt[.]{5/18}$ 46 -1/2-5/23 -3 $\sqrt{1/2}$ 47 -1/2-5/24 -3 $\sqrt{2/9}$ 48 -1/2-5/25 -3 $-\sqrt{9/28}$ 49 -1/2-3/2-2 $-\sqrt{\frac{1}{12}}$ 50 -1/2-3/2-2 $\sqrt{5/28}$ -1/251 -3/2 $\sqrt{\frac{5/12}{5}}$ 52 -1/2-3/2 $\sqrt{9/35}$ 53 -1/2-1/2-11 $-\sqrt{4/15}$ -1/2-1/23 -154 $\sqrt{10/21}$ -1/2-1/255 5 -1 $-\sqrt{1/6}$ 56 -1/21/20 0 $\sqrt{1/70}$ 57 -1/21/21 0 $\sqrt{4/21}$ 58 -1/21/22 0 $-\sqrt{\frac{4}{45}}$ 59 -1/21/23 0 $-\sqrt{1/7}$ -1/21/24 $\sqrt{25/63}$ 1/2 -1/2 $-\sqrt{\frac{8/35}{5}}$ 62 -1/23/21 1 $\sqrt{1/7}$ 2 63 -1/23/21 $\sqrt{1/30}$ 3/2-1/21 64 3 $-\sqrt{5/14}$ 65 -1/23/24 1 $\sqrt{5/21}$ 66 -1/23/21 $-\sqrt{\frac{5/28}{5}}$ 67 -1/25/22 2 $\sqrt{5/12}$ Table 20: $[j_1 \otimes j_2 = 3 \otimes 5/2]$ -1/268 5/2 $-\sqrt{\frac{9/28}{2}}$ 69 -1/25/2 $\sqrt{1/12}$ 70 -1/25/25 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ 11/2 $\frac{11}{-11/2}$ $\sqrt{\frac{5/28}{1}}$ 71 1/2 2 -5/2-2 $-\sqrt{6/11}$ 2 -3-3/29/2-9/2 $\sqrt{5/12}$ 1/2-5/2 $\sqrt{5/11}$ 72 3 -23 -3-3/211/2-9/2 $\sqrt{9/28}$ 73 1/2-5/24 -2 $\sqrt{1/3}$ 4 -3-1/27/2-7/2 $\sqrt{1/12}$ $\sqrt{16/33}$ 74 1/2-5/25 -25 -3-1/29/2-7/2 $-\sqrt{8/35}$ 75 1/2-3/21 -1 $\sqrt[n]{2/11}$ -1/2-7/26 -311/2 $-\sqrt{1/7}$ $-\sqrt{5/21}$ 76 1/2-3/22 -17 -31/25/2-5/2 $\sqrt{1/30}$ 77 1/2-3/23 -1 $\sqrt{3/7}$ 1/2-5/28 -37/2 $\sqrt{\frac{5/14}{1}}$ 1/278 -3/24 -1 $-\sqrt{\frac{3/11}{}}$ 9 -31/29/2-5/2 $\sqrt{5/21}$ 1/2-3/2-179 5 $\sqrt{2/33}$ 10 -31/211/2-5/2 $\sqrt{\frac{1}{6}}$ 1/2 $\sqrt{3/14}$ 80 -1/20 0 11 -33/23/2-3/2 $\sqrt{1/70}$ $-\sqrt{8/21}$ 1/2-1/20 81 1 12 -3-3/23/25/2 $-\sqrt{4/21}$ 82 1/2-1/22 0 $\sqrt{\frac{2/7}{\epsilon}}$ 13 -33/27/2-3/2 $-\sqrt{4/45}$ $-\sqrt{8/77}$ 83 1/2-1/23 0 14 -33/29/2-3/2 $\sqrt{1/7}$ 84 1/2-1/24 0 $\sqrt{1/66}$ 15 -33/211/2-3/2 $\sqrt{25/63}$ $-\sqrt{2/7}$ 1/2-1/20 -1/216 -35/21/2 $\sqrt{9/35}$ 86 1/21/2 $\sqrt{5/14}$ 17 -35/23/2-1/2 $-\sqrt{4/15}$ 87 1/21/23 1 $-\sqrt{5/21}$ 18 -35/25/2-1/2 $\sqrt{10/21}$ 1/21/288 5 1 $\sqrt{2/21}$ 19 -35/27/2-1/2 $\sqrt{9/28}$ $-\sqrt{5/231}$ 1/22 89 3/22 20 -35/29/2-1/2 $-\sqrt{1/12}$ 90 1/23/23 2 $\sqrt{1/462}$ 21 -35/211/2-1/2 $-\sqrt{\frac{5/28}{5}}$ 2 91 1/23/24 -2-5/29/2-9/2 $\sqrt{5/12}$ $\sqrt{6/11}$ 92 1/23/25 2 23 -211/2-5/2-9/2 $\sqrt[6]{5/18}$ $-\sqrt{4/9}$ 93 1/25/23 3 24 -2-3/27/2-7/2 $-\sqrt{1/2}$ 1/25/24 3 $-\sqrt{1/99}$ 9/2-2-3/2-7/225 $\sqrt{2/9}$ 95 1/25/25 3 $\sqrt{6/11}$ -226 -3/211/2-7/2 $\sqrt{1/7}$ 3/2-5/2-1 $\sqrt{\frac{5/14}{5}}$ 96 1 27 -2-1/25/2-5/2 $\sqrt{5/14}$ 2 $-\sqrt{\frac{2}{63}}$ 97 3/2-5/2-128 -2-1/27/2-5/2 $\sqrt{1/3}$ 3/2-5/23 -198 $\sqrt{49/198}$ 29 -2-1/29/2-5/2 $\sqrt{1/7}$ $\sqrt[\cdot]{4/11}$ 99 3/2-5/24 -1-230 -1/211/2-5/2 $\sqrt{1/42}$ $-\sqrt{\frac{2}{7}}$ 100 3/2-5/25 -131 -21/23/2-3/2 $-\sqrt{1/6}$ 101 3/2-3/20 0 $\sqrt{\frac{1/14}{1}}$ 1/232 -25/2 -3/2 $-\sqrt{\frac{9}{70}}$ 3/2102 -3/2 $\sqrt{\frac{2/21}{2}}$ -21/27/2-3/233 $\sqrt{\frac{1/84}{}}$ 103 3/2-3/2 $\sqrt{169/462}$ 34 -21/29/2-3/2 $\sqrt{49/180}$ 104 3/2-3/23 0 $\sqrt{2/11}$ 35 -21/211/2-3/2 $\sqrt{\frac{9/28}{}}$ $\sqrt{5/21}$ 3/2-3/20 105 4 36 -23/21/2-1/2 $\sqrt{25/252}$ 3/2-3/20 $-\sqrt{1/21}$ 106 5 37 -2-1/23/23/2 $-\sqrt{\frac{8/35}{5}}$ $-\sqrt{1/14}$ 107 3/2-1/21 1 38 -23/25/2-1/2 $-\sqrt{\frac{1}{7}}$ 108 3/2-1/22 1 $\sqrt{20/63}$ 39 -23/27/2-1/2 $\sqrt{1/30}$ 109 3/2-1/23 1 $\sqrt{361/1386}$ -240 3/29/2-1/2 $\sqrt{5/14}$ $\sqrt{5/77}$ 1103/2-1/24 1 41 -23/211/2-1/2 $\sqrt[.]{5/21}$ 111 3/2-1/25 1 $-\sqrt{1/21}$ 5/2-21/242 1/2 $-\sqrt{9/28}$ 1/2 $\dot{\sqrt{5/21}}$ 112 3/22 2 43 -25/23/21/2 $-\sqrt{1/12}$ $-\sqrt{5/14}$ 3/21/23 2 113 44 -25/25/21/2 $\sqrt{5/28}$ 2 114 3/21/2 4 45 -25/27/21/2 $\sqrt{16/63}$ $\sqrt[6]{5/12}$ 2 3/21/2115 5 $\sqrt{125/1386}$ 46 -21/25/29/2 $-\sqrt{\frac{4/9}{1}}$ $\sqrt{\frac{1/77}{1}}$ 3 116 3/23/23 -21/247 5/211/2 $\sqrt{5/9}$ $\sqrt{\frac{2}{9}}$ 1173/23/23 48 -1-5/27/2-7/2 $-\sqrt{1/2}$ 118 3/25/24 4 $\sqrt{50/99}$ 49 -1-5/29/2-7/2 $\sqrt{\frac{1/2}{c}}$ $\sqrt{3/11}$ 119 3/25/250 -1-5/211/2-7/2 $\sqrt{1/6}$ $-\sqrt{\frac{2/7}{2}}$ 120 5/2-5/20 51 -1-3/25/2-5/2 $\sqrt{5/14}$ 121 5/2-5/20 1 $\sqrt{10/63}$ 52 -1-3/27/2-5/2 $\sqrt{25/84}$ -5/22 0 122 5/2 $\sqrt{10/99}$ 53 -1-3/29/2-5/2 $\sqrt{5/36}$ -5/2123 5/23 0 -1-3/211/2-5/2 $\sqrt{1/28}$ 124 5/2-5/24 0 55 -1-1/23/2-3/2 $\sqrt{1/252}$ 1255/2-5/25 0 -156 -1/25/2-3/2 $\sqrt{1/7}$ $-\sqrt{5/21}$ 126 5/2-3/21 1 -17/257 -1/2-3/2 $\sqrt{5/14}$ $-\sqrt{\frac{5/231}{5}}$ 127 5/2-3/22 1 58 -1-1/29/2-3/2 $\sqrt{1/3}$ $\sqrt[8]{5/11}$ 128 5/2-3/23 -1-1/211/2-3/259 $\sqrt{\frac{1}{7}}$ 129 5/2-3/24 $-\sqrt{4/21}$ 60 -11/21/2-1/2 $\sqrt{1/42}$ 5/2-3/2130 5 1 $-\sqrt[1]{1/105}$ 61-11/23/2-1/2 $\sqrt{5/28}$ 2 131 5/2 -1/22 $\sqrt{8/35}$ 62 -11/25/2-1/2 $\sqrt{5/12}$ 2 $-\sqrt{\frac{1}{63}}$ 132 5/2-1/23 63 -11/27/2-1/2 $\sqrt{9/28}$ 5/2-1/24 2 133 64 1/29/2 $\sqrt{160/693}$ -1/2134 5/22 $\sqrt{\frac{1/12}{1/12}}$ $\sqrt{25/77}$ 65 -11/211/2-1/2 $\sqrt{5/18}$ 135 5/21/23 3 $\sqrt{2/21}$ -13/21/2 1/266 $\sqrt{1/2}$ 3 $-\sqrt{7/30}$ 136 5/21/2-13/23/21/267 $\sqrt[.]{2/9}$ 137 5/21/2 $\sqrt{1/35}$ 68 -13/25/21/2 $\sqrt[1]{1/2}$ 5/23/24 $\sqrt{\frac{8/63}{\epsilon}}$ 138 4 $\sqrt[\mathbf{v}]{1/2}$ 69 -13/27/21/25/2 3/2 4 139 $\sqrt{35/99}$ 70 -13/29/21/2140 5/2 $\sqrt{2^{5/154}}$ 71 -13/211/21/2 $\sqrt{1/14}$ 72 -15/23/23/2 $-\sqrt{2/7}$ 73 -15/25/23/2 $\sqrt{8/21}$ 74-17/25/23/2 $\sqrt{50/231}$ 75 -15/2 9/23/2 $\sqrt{1/22}$ -111/276 5/23/2 $\sqrt{5/42}$ 77 0 -5/25/2-5/2 $\sqrt{8/21}$ 78 0 -5/27/2-5/2 $\sqrt{25/66}$ 79 0 -5/29/2-5/2 $\sqrt{4/33}$ 0 80 -5/211/2-5/2 $-\sqrt{6/35}$ 81 0 -3/23/2-3/2 $\sqrt{7/30}$ 82 0 -3/25/2-3/2 $\sqrt{\frac{45/154}{45/154}}$ 0 9/2-3/283 -3/2 $\sqrt{10/33}$ -3/20 11/2-3/284 $\sqrt{1/7}$ 85 0 -1/21/2-1/2 $\sqrt{4/35}$ 86 0 -1/23/2-1/2 $-\sqrt{8/105}$ 87 0 -1/25/2 -1/2Table 16: $[j_1 \otimes j_2 = 3 \otimes 1/2]$ $\sqrt{4/21}$ 0 -1/27/2-1/2 $\sqrt{10/231}$ 89 0 -1/29/2-1/2 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_2}{-1/2}$ -7/2 $\sqrt{100/231}$ 7/2 0 11/290 -1/2-1/2 $\sqrt{6/7}$ $-\sqrt{1/7}$ 2 -31/25/2 -5/20 1/291 1/21/2 $\sqrt{1/7}$ 3 -31/27/2 -5/2 $\sqrt{4/35}$ 92 0 1/2 3/21/2 $\sqrt{1/7}$ $\sqrt{8/105}$ 4 -1/25/2-5/2-25/2 0 1/21/293 $\dot{\sqrt{6/7}}$ $-\sqrt{4/21}$ 5 -2-1/27/2-5/294 0 1/27/21/2 $\sqrt{5/7}$ 6 -21/25/2-3/2/10/23195 0 1/29/21/2 $\sqrt{2/7}$ 7 -21/27/2-3/2 $\sqrt{100/231}$ 96 0 1/211/21/2 $\sqrt{2/7}$ $-\sqrt{\frac{6/35}{1}}$ -1/25/20 3/297 3/23/2 $\sqrt{5/7}$ $\sqrt{7/30}$ -1/27/2-3/298 0 3/25/23/2 $-\sqrt{4/7}$ 1/25/2 -1/2 $-\sqrt{\frac{45/154}{}}$ 10 -199 0 3/29/23/2 $\sqrt{3/7}$ $\sqrt{10/33}$ -11/2 7/2-1/211 0 3/211/23/2100 $\sqrt{3/7}$ $-\sqrt{\frac{5/42}{1}}$ 12 -1/25/2-1/25/2101 0 5/25/2 $\sqrt[.]{4/7}$ $\sqrt{8/21}$ 13 0 -1/27/2-1/2102 0 5/27/25/2 $-\sqrt{\frac{3}{7}}$ 14 0 1/25/21/2 $\sqrt{25/66}$ 103 0 5/29/25/2 $\sqrt{4/7}$ 15 1/27/21/2 $\sqrt{4/33}$ 104 0 5/211/25/2 $\sqrt{\frac{4/7}{}}$ 16 -1/25/21/2 $\sqrt{1/14}$ 105 1 -5/23/2-3/2 $\sqrt{3/7}$ $\sqrt{\frac{2/7}{}}$ 17 -1/27/21/2106 1 -5/25/2-3/2 $-\sqrt{\frac{2}{7}}$ 5/23/2 $\sqrt{8/21}$ 18 1 1/2107 1 7/2-5/2-3/2 $\sqrt{5/7}$ 1/27/23/2 $\sqrt{50/231}$ 19 1 -5/21 9/2108 -3/2 $\sqrt{5/7}$ $\sqrt{1/22}$ 2 -1/25/2 3/220 109 1 -5/211/2-3/2 $\sqrt{2/7}$ $-\sqrt{2/21}$ 3/22 -1/27/221 1 110 -3/21/2-1/2 $\sqrt{1/7}$ $-\dot{\sqrt{7/30}}$ 22 2 1/25/25/2111 1 -3/23/2-1/2 $\sqrt{6/7}$ $-\sqrt[4]{\frac{1}{35}}$ 23 2 1/27/25/21121 -3/25/2-1/2 $\sqrt{\frac{6}{7}}$ 24 3 -1/25/25/2 $\sqrt{8/63}$ 113 1 -3/27/2-1/2 $\sqrt[r]{1/7}$ 25 -1/27/25/2 $\sqrt{35/99}$ 1 114 -3/29/2-1/21/2 $\sqrt{25/154}$ 115 1 -3/211/2-1/2 $\sqrt{4/21}$ 116 1 -1/21/21/2 $-\sqrt{\frac{1}{105}}$ 1 3/21/2117 -1/2 $-\sqrt{8/35}$ 5/2 1 1/2118 -1/2 $\sqrt{1/63}$ 119 1 -1/27/21/2 $\sqrt{160/693}$ 120 1 -1/29/21/2 $\sqrt{25/77}$ 121 1 -1/211/21/2 $\sqrt{9/35}$ 1 122 1/23/23/2 $-\sqrt{1/35}$ 123 1 1/25/23/2 $-\sqrt{\frac{5}{21}}$ 1 1/27/2124 3/2 $\sqrt{5/231}$ 1 1/2 9/2125 3/2 $\sqrt{5/11}$ 126 1 1/2 11/23/2 $\sqrt{2/7}$ 5/2 1 5/2127 3/2 $\sqrt{10/63}$ 128 1 3/27/25/2 $\sqrt{10/99}$ 129 1 3/29/25/2 $\sqrt{5/11}$ 130 1 3/211/25/2 $\sqrt{2/9}$ 7/2131 1 5/27/2Table 17: $[j_1 \otimes j_2 = 3 \otimes 1]$ $\sqrt{50/99}$ 132 1 5/29/27/2 $\sqrt{3/11}$ 133 1 5/211/2 7/2 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{1/21}$ 2 1/2 -1/2134 -5/24 $\sqrt{3/4}$ $\sqrt{5/21}$ 2 3 3/2 -5/22 -1/2135 $\sqrt{\frac{1/4}{}}$ $\sqrt{5/14}$ 3 -30 4 -35/2136 2 -5/2-1/2 $\sqrt{5/7}$ 4 -32 137 -5/27/2 $\sqrt{16/63}$ $-\sqrt{1/4}$ $\sqrt{125/1386}$ 5 -31 3 -2138 2 -5/29/2-1/2 $\sqrt{\frac{1/77}{-}}$ $\sqrt{1/28}$ 6 4 -2-31 139 11/2-5/2-1/2 $-\sqrt{5/21}$ $\sqrt{1/4}$ 7 -2-13 -3140 -3/21/21/2 $\sqrt{3/4}$ $-\sqrt{\frac{1}{21}}$ 8 -2-14 -32 3/2 141 -3/21/2 $\sqrt{5/21}$ $\sqrt{\frac{1/14}{}}$ 9 -20 2 -2142 -3/25/21/2 $-\sqrt{1/3}$ $\sqrt{20/63}$ -210 0 2 1/2143 -3/27/2 $\sqrt{3/7}$ 11 1/2 $\sqrt{361/1386}$ 144 2 -3/29/2 $\sqrt{10/21}$ $\sqrt{5/77}$ -1145 2 -3/211/21/2 $-\sqrt{5/12}$ $-\sqrt{\frac{2}{7}}$ 13 -23 -1146 2 -1/23/23/2 $\sqrt{3/28}$ $-\sqrt{1/14}$ 14 -21 4 -1147 2 -1/25/23/2 $\sqrt{1/21}$ 2 15 -1-1-22 3/2/2/21148 -1/27/2 $\sqrt{5/12}$ $\sqrt{169/462}$ 16 -1-13 -22 149 -1/29/23/2 $\sqrt{2/11}$ $\sqrt{15/28}$ 17 -1-14 -2150 2 -1/211/23/2 $-\sqrt{5/14}$ $-\sqrt{\frac{8/21}{-}}$ 18 -10 2 -12 1/25/25/2151 $-\sqrt{\frac{2/63}{2}}$ $-\sqrt{1/12}$ 19 0 3 -17/22 1/25/2152 $\sqrt{15/28}$ $\sqrt{49/198}$ 20 -10 4 -1153 2 1/29/25/2 $\sqrt{\frac{2}{7}}$ $\sqrt{4/11}$ 21 2 -11 0 154 2 1/211/25/2 $-\sqrt{1/2}$ $-\sqrt{\frac{4/9}{}}$ 3 0 22 1 -1155 2 3/27/27/2 $\sqrt{3/14}$ $\sqrt{1/99}$ 4 0 23 -11 2 7/2156 3/29/2 $\sqrt{1/7}$ $\sqrt{6/11}$ 24 0 -12 -1157 3/211/27/2 $\sqrt{1/2}$ $-\sqrt{\frac{5}{11}}$ 25 0 -13 -1158 5/29/29/2 $\sqrt{5/14}$ $\sqrt{6/11}$ 26 0 4 11/2159 5/29/2 $\sqrt{3/7}$ $\sqrt{2/7}$ 27 0 2 1/2160 3 -5/21/2 $\sqrt{4/7}$ $\dot{\sqrt{5/14}}$ 161 3 -5/23/21/2 $\sqrt[\mathbf{v}]{1/7}$ $\sqrt{5/21}$ 29 162 3 -5/25/21/2 $-\sqrt{1/2}$ $\sqrt{2/21}$ 0 3 30 163 3 -5/27/21/2 $\sqrt{5/14}$ $\sqrt{5/231}$ 31 0 1 4 164 3 -5/29/21/2 $\sqrt{2/7}$ $\sqrt{1/462}$ 0 32 1 -12 3 11/21/2165 -5/2 $\sqrt[\mathbf{v}]{1/2}$ $\sqrt{3/14}$ 33 1 -13 0 166 3 -3/23/23/2 $\sqrt{3/14}$ $\sqrt{8/21}$ 34 1 4 0 167 3 -3/25/23/2 $-\sqrt{\frac{8/21}{}}$ $\sqrt{\frac{2}{7}}$ 35 1 0 2 1 3 7/23/2-3/2168 $\sqrt{1/12}$ $\sqrt{8/77}$ 36 1 3 9/23 3/2169 -3/2 $\sqrt{15/28}$ $\sqrt{1/66}$ 37 0 4 170 3 -3/211/23/2 $\sqrt{1/21}$ $\sqrt{5/21}$ 2 2 38 1 1 171 3 -1/25/25/2 $-\sqrt{5/12}$ $\sqrt{\frac{3/7}{-}}$ 2 39 1 1 3 172 3 -1/27/25/2 $\sqrt{15/28}$ $\sqrt{3/11}$ 2 40 1 1 4 173 3 -1/29/25/2 $\sqrt{10/21}$ $\sqrt{\frac{2}{33}}$ 41 2 -12 1743 -1/211/25/2 $\sqrt{5/12}$ $\sqrt{1/3}$ 42 2 3 7/2175 3 1/27/2 $\sqrt{3/28}$ $\sqrt{16/33}$ 43 2 4 7/2176 3 1/29/2 $\sqrt{5/21}$ $\sqrt{2/11}$ 44 2 2 2 1/2177 3 11/27/2 $\sqrt{\frac{1}{3}}$ $\sqrt{6/11}$ 45 178 3 3/29/29/2 $\sqrt[.]{3/7}$ $\sqrt[.]{5/11}$ 46 179 3 3/211/29/2 $-\sqrt{1/4}$

180

47

48

49

50

51

52

53

3

3

3

3

3

3 3

4 2

2

1 4 3

-12

-13 2

0 3 3

0 4 3 $\sqrt{3/4}$

 $\sqrt[3]{5/7}$

 $\sqrt{1/4}$

 $\sqrt{1/28}$

 $\sqrt{3/4}$

 $\sqrt[4]{1/4}$

5/2

11/2

11/2

Table 13: $[j_1 \otimes j_2 = 5/2 \otimes 3/2]$

Table 21: $[j_1 \otimes j_2 = 3 \otimes 3]$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{\frac{1/2}{\sqrt{1/2}}}$ 2 -2-3-53 -3-26 -5 $\sqrt{3/11}$ -44 -3-14 $\sqrt[4]{\frac{\sqrt{1/2}}{\sqrt{5/22}}}$ 5 -3-1-46 -3-1-4 $\sqrt{\frac{1/6}{\sqrt{9/22}}}$ 7 -38 -30 -3 $\sqrt{\frac{1/3}{\sqrt{1/11}}}$ 9 -30 5 -30 10 -36 -3 $\sqrt[.]{5/42}$ 11 -31 2 -2 $-\sqrt{1/3}$ 12 -31 3 -2 $\sqrt{\frac{27}{77}}$ 13 -31 -2 $-\sqrt{1/6}$ 14 -31 -2 $\sqrt{1/33}$ 15 -2-3 $-\sqrt{\frac{3}{28}}$ 16 $\sqrt{25/84}$ 17 -3-1 $-\sqrt{1/3}$ -32 -118 Table 25: $[j_1 \otimes j_2 = 7/2 \otimes 2]$ $\sqrt{\frac{15}{77}}$ -32 -119 $-\sqrt{5/84}$ -32 -120 $\sqrt{1/132}$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ -121 -32 $\frac{11/2}{11}$ -11/2 $\sqrt{1/7}$ 22 -33 0 $-\sqrt{7/11}$ 2 -7/29/2-9/2 $\sqrt{9/28}$ 23 -33 0 $\sqrt{4/11}$ 3 -7/2-111/2-9/2 $\sqrt{25/84}$ $\sqrt{7/15}$ 24 3 -34 -7/20 7/2-7/2 $-\sqrt{1/6}$ 25 -33 3 $-\sqrt{14/33}$ 5 -7/20 9/2-7/2 $\sqrt{9/154}$ 26 -33 4 0 $\sqrt{6/55}$ -7/211/26 0 -7/2 $\sqrt{1/84}$ 3 27 -30 $-\sqrt{\frac{5/12}{}}$ 7 -7/21 5/2-5/2 $\sqrt{1/924}$ $\sqrt{2/5}$ 3 0 28 -38 -7/21 7/2-5/2 $\sqrt{1/2}$ $-\sqrt{\frac{7/44}{1}}$ 29 -2-3-59 -7/21 9/2-5/2 $\sqrt[1]{1/2}$ 30 -2-3-5 $\sqrt{4/165}$ 10 -7/21 11/2-5/2-2 $\sqrt{5/11}$ 31 -2-4 $\sqrt{1/2}$ 2 11 -7/23/2-3/2 $\sqrt{6/11}$ $-\sqrt{1/3}$ -2-232 12 -7/22 5/2-3/2 $\sqrt{\frac{1/3}{\cdot}}$ 33 -1 $\sqrt{2/15}$ 13 -7/22 7/2-3/2 $-\sqrt{1/11}$ $-\sqrt{1/33}$ -2-334 -12 14 9/2-3/2-7/2 $-\sqrt{1/6}$ -2-3 $\sqrt{1/330}$ 35 -12 11/215 -7/2-3/2 $\sqrt{9/22}$ -2-1-3 $\sqrt{4/11}$ 36 16 -5/2-29/2-9/2 $-\sqrt{5/21}$ -2-2 $\sqrt{7/11}$ 37 0 17 -5/2-211/2-9/2 $\sqrt[4]{\frac{1}{6}}$ -238 -20 $-\sqrt{2/5}$ -5/27/2-7/2 $\sqrt{3/154}$ $-\sqrt{\frac{1}{111}}$ 39 -20 -2-5/2-19/2-7/2 $-\sqrt{\frac{1}{3}}$ 40 -20 -2 $\sqrt{28/55}$ -5/2-111/2-7/220 $\sqrt{8/33}$ 41 -20 -2 $\sqrt{5/14}$ -5/221 -5/20 5/2 $\sqrt{5/28}$ 42 -1 $\sqrt{1/105}$ 22 -5/20 7/2-5/2 $-\sqrt{5/28}$ 43 -21 -1 $\sqrt{25/66}$ 23 -5/20 9/2-5/2 $\sqrt{16/77}$ 1 44 -2-124 -5/20 11/2-5/2 $\sqrt{14/55}$ $-\sqrt{\frac{9/28}{}}$ $-\sqrt{\frac{2/7}{2}}$ -21 -145 25 -5/21 3/2-3/2 $\sqrt{5/44}$ 46 -21 -1 $\sqrt{\frac{1}{84}}$ 26 -5/21 5/2 -3/2 $-\sqrt{1/7}$ 47 -22 0 $\sqrt{32/105}$ -5/21 7/2-3/2 $\sqrt{1/7}$ 48 -22 $\sqrt{289/924}$ 28 -5/21 9/2-3/2 $\sqrt{1/6}$ -22 $\sqrt{14/165}$ 49 29 -5/21 11/2 -3/2 $\sqrt{7/22}$ $\sqrt{3/14}$ 50 -230 -5/22 3/2-1/2 $-\sqrt{\frac{4/21}{}}$ $-\sqrt{8/21}$ -22 51 2 -1/231 -5/25/2 $\sqrt{3/77}$ $\sqrt{2/7}$ -20 52 2 7/2-1/232 -5/2 $-\sqrt{3/28}$ -23 1 $-\sqrt{8/77}$ 53 33 -5/22 9/2-1/2 $\sqrt{25/84}$ 54 -23 $\sqrt{1/66}$ 34 -5/22 11/2-1/2 $-\sqrt{1/3}$ 55 -23 $\sqrt{2/15}$ -2-7/2-3/27/2 $\sqrt{15/77}$ $\sqrt{\frac{16/33}{16/33}}$ 56 -23 1 -3/29/2-7/2 $\sqrt{5/84}$ 57 -23 1 $\sqrt{21/55}$ 37 -3/2-211/2 -7/2 $-\sqrt{5/28}$ -23 $\sqrt{1/132}$ -3/25/238 -1-5/2 $\sqrt{3/11}$ 59 -3 $\sqrt{32/105}$ 39 -3/2-17/2-5/2 $\sqrt{1/132}$ $\sqrt{1/2}$ 60 -1-3-3/2-19/240 -5/2 $\sqrt{5/22}$ $\sqrt{\frac{28/55}{2}}$ 61 -1-341 -3/211/2-5/262 -2 $\sqrt{1/3}$ $\sqrt{1/7}$ 42 -3/20 3/2-3/2 $-\sqrt{1/11}$ $\sqrt{3/14}$ 63 -1-24 -343 -3/20 5/2-3/2 $\sqrt{1/6}$ $-\sqrt{\frac{3}{35}}$ 64 -1-25 -344 -3/20 7/2-3/2 $\sqrt{9/22}$ 65 -1-2-3 $\sqrt{\frac{27/154}{}}$ 45 -3/20 9/2-3/2 $\sqrt{\frac{2}{7}}$ -1-2 $\sqrt{21/55}$ 66 0 11/246 -3/2-3/2 $\sqrt{\frac{20/77}{1}}$ $-\sqrt{\frac{2}{7}}$ -1-147 -3/21 3/2-1/2 $\sqrt[8]{5/11}$ -1-268 -1 $\sqrt{1/14}$ 48 -3/21 5/2-1/2 $-\sqrt{3/14}$ $\sqrt{2/21}$ -10 -169 49 -3/21 7/2-1/2 $\sqrt{1/42}$ -10 -170 $\sqrt{169/462}$ 50 -3/21 9/2-1/2 $\sqrt{1/6}$ $\sqrt{2/11}$ -1-1710 3 51 -3/21 11/2-1/2 $\sqrt{15/154}$ $\dot{\sqrt{1/14}}$ 72 -10 4 -1-3/22 1/252 $-\sqrt{5/42}$ $-\sqrt{\frac{2/7}{1}}$ 73 -10 5 -12 53 -3/25/21/2 $\sqrt{25/66}$ 74-10 6 -1 $\sqrt{8/21}$ -3/22 7/21/254 $\sqrt{1/7}$ $-\sqrt{\frac{50/231}{50}}$ 75 1 0 -12 -3/29/21/255 $-\sqrt{1/28}$ 1 76 -10 $\sqrt{1/22}$ 2 56 -3/211/21/2 $-\sqrt[8]{3/28}$ 77 -11 2 0 $\sqrt{1/21}$ 57 -1/2-25/2-5/2 $\sqrt{1/6}$ 78 -11 3 0 $\sqrt{2/7}$ 58 -1/2-27/2-5/2 $\sqrt{1/154}$ 79 -11 0 4 $\sqrt{5/11}$ 59 -1/2-29/2-5/2 $\sqrt{25/84}$ 80 -11 0 $\sqrt{7/33}$ 60 -1/2-211/2-5/2 $\sqrt{75/308}$ 81 -11 0 -1/2 $\sqrt{2/35}$ 61 -13/2-3/2 $\sqrt{5/28}$ 82 -12 $\sqrt{121/420}$ 62 -1/2-15/2 -3/2 $-\sqrt{5/28}$ $-\sqrt{2/21}$ 83 -12 63 -1/2-17/2-3/2 $\sqrt{16/77}$ 84 -12 $\sqrt{125/924}$ 64 -1/2-19/2-3/2 $-\sqrt{\frac{9/28}{2}}$ $\sqrt{14/33}$ -12 1 85 11/2 -3/265 -1/2-1 $\sqrt{5/44}$ $\sqrt{9/35}$ -12 1 86 3/2 -1/2-1/266 0 $\sqrt{5/42}$ $\sqrt[.]{1/35}$ -13 2 87 67 -1/20 5/2-1/2 $-\sqrt{5/21}$ $-\sqrt{1/3}$ -12 88 3 3 68 -1/20 7/2-1/2 $-\sqrt{\frac{5/231}{5}}$ 89 -13 4 2 $\sqrt{27/77}$ 69 -1/29/2-1/2 $-\sqrt{1/6}$ $\sqrt{5/11}$ 90 -13 5 2 70 -1/211/2-1/2 $\sqrt{1/33}$ $-\sqrt{\frac{6/35}{1}}$ 91-13 6 2 71-1/23/2 1/21 $\sqrt{1/6}$ $\sqrt{\frac{7/30}{1}}$ 92 0 -372 -1/21 5/21/2 $\sqrt{9/22}$ $-\sqrt{\frac{45/154}{-}}$ 93 0 -3-373 -1/21 9/21/2 $\sqrt{1/3}$ 94 0 -35 -3 $\sqrt{10/33}$ 74 -1/21/21 11/2 $\sqrt{1/11}$ 0 95 -36 -3 $\sqrt{1/70}$ 75-1/22 3/23/2 $-\sqrt{5/21}$ $\sqrt{16/105}$ 0 2 96 -2-276 -1/22 5/23/2 $\sqrt{1/6}$ 97 0 -23 -2 $\sqrt{8/21}$ 77 -1/22 7/2 $^{3/2}$ · $\sqrt{\frac{80/231}{80/231}}$ $\sqrt{3/154}$ 98 0 -24 -2-1/22 3/278 9/2 $\sqrt{1/3}$ 99 0 -2-2 $\sqrt{7/66}$ 79 -1/22 11/2 3/2 $\sqrt{8/33}$ $\sqrt[\cdot]{1/70}$ -2-2100 1/2 80 -23/2-3/2101 -1 $\sqrt{16/105}$ 81 1/2-25/2-3/2 $\sqrt{1/42}$ -10 $\sqrt{\frac{8/21}{1}}$ 102 -11/2-27/2-3/282 $-\sqrt{1/6}$ 0 -1-1 $\sqrt{80/231}$ 103 3 -283 1/29/2-3/2 $\sqrt{7/66}$ $\sqrt{15/154}$ 0 -1-1104 4 84 1/2-211/2-3/2 $\sqrt{5/42}$ $-\sqrt{6/35}$ 0 -1-1105 5 85 1/2-13/2-1/2 $\sqrt{25/66}$ $\sqrt[8]{7/30}$ 106 0 -16 -15/2 86 1/2-1-1/2 $-\sqrt{1/7}$ 107 0 0 0 0 $\sqrt{45/154}$ 87 1/2-19/2-1/2 $\sqrt{4/21}$ $\sqrt{\frac{10/33}{10/33}}$ 108 0 0 2 0 1/2 -111/2 -1/288 $\sqrt{18/77}$ $\sqrt{9/35}$ 109 0 0 0 1/20 3/21/289 $\sqrt{100/231}$ $-\sqrt{1/35}$ 110 0 0 90 1/20 5/21/2 $-\sqrt{3/14}$ 111 0 1 1 1 $\sqrt{5/21}$ 91 1/20 7/21/2 $\sqrt{1/42}$ 0 112 1 2 1 $\sqrt{5/231}$ 92 1/20 9/21/2 $\sqrt{1/6}$ $\sqrt{5/11}$ 0 1 3 1 113 93 1/20 11/21/2 $\sqrt{15/154}$ 114 0 1 4 1 $\sqrt{2/35}$ 94 1/21 3/2 3/2 $-\sqrt{\frac{5/42}{}}$ 115 0 1 5 1 $\sqrt{121/420}$ 95 1/21 5/23/2 $\sqrt{25/66}$ $-\sqrt{2/21}$ 1160 1 1 96 1/2 1 7/23/2 $-\sqrt{\frac{5/21}{5}}$ 117 2 2 $\sqrt{125/924}$ 1/2 1 9/2 97 3/2 $\sqrt[4]{1/6}$ $\sqrt{14/33}$ 118 98 1/21 11/23/2 $\sqrt{3/154}$ $-\sqrt{1/21}$ 0 2 119 1/2 2 5/299 5/2 $-\sqrt{1/3}$ $\sqrt{2/7}$ 0 2 120 1/2 2 100 5/27/2 $\sqrt{8/33}$ 0 2 6 2 $\sqrt{5/11}$ 121 101 1/22 9/25/2 $-\sqrt{1/6}$ 122 0 3 3 3 $\sqrt{7/33}$ 102 1/22 11/25/2 $\sqrt{9/22}$ $\sqrt{1/14}$ 123 0 3 4 3 103 3/2 -2-1/2 $-\sqrt{1/3}$ $\sqrt{2/7}$ 1240 3 3 -1/2104 3/25/2 $\sqrt{1/11}$ 125 0 3 3 $\sqrt{8/21}$ 105 3/2 -27/2-1/2 $\sqrt{5/42}$ 126 -3-2 $\sqrt{50/231}$ 106 3/2-29/2-1/2 $\sqrt{1/3}$ $\sqrt{1/22}$ 127 -33 -2-1/2107 3/2-211/2 $\sqrt{27/77}$ $-\sqrt{\frac{2/7}{1-7}}$ 128 1 -34 -2-11/2108 3/23/2 $\sqrt{1/6}$ 129 1 -35 -2 $-\sqrt{\frac{1}{14}}$ 109 3/2-15/21/2 $\sqrt{1/33}$ 130 1 6 -2-3 $\sqrt{2/21}$ 110 3/2-17/21/2 $-\sqrt{5/28}$ 131 1 -2-1 $\sqrt{169/462}$ 111 3/29/21/2 $\sqrt{5/28}$ $\sqrt{2/11}$ 132 1 -211/21/2 112 3/2 $\sqrt{16/77}$ $\sqrt{1/7}$ 133 -2-1113 3/20 3/23/2 $-\sqrt{3/14}$ 3/20 5/23/2 114 $\sqrt{\frac{5/44}{5}}$ $-\sqrt{3/35}$ 3/2 7/23/20 115 $\sqrt{1/7}$ 1 0 136 0 $\sqrt{27/154}$ 0 116 3/29/23/2 $\sqrt{1/28}$ $\sqrt{21/55}$ 1 0 137 -11 117 3/20 11/23/2 $-\sqrt{3/28}$ $\sqrt{5/28}$ 0 138 1 -12 118 3/21 5/25/2 $-\sqrt{1/6}$ $-\sqrt{32/105}$ 139 1 -13 0 119 3/21 7/25/2 $\sqrt{1/154}$ 1401 -14 0 $-\sqrt{1/132}$ 120 3/21 9/25/2 $\sqrt{25/84}$ 1411 -10 $\sqrt{28/55}$ 121 3/21 11/25/2 $\sqrt{75/308}$ $\sqrt{2/15}$ 1 0 142 6 2 7/27/2122 3/2 $\sqrt{\frac{3/14}{.}}$ $-\sqrt{16/33}$ 1431 0 2 9/27/2123 3/2 $\sqrt{1/42}$ 144 1 0 $\sqrt{21/55}$ 2 124 3/211/27/2 $-\sqrt{1/6}$ 145 1 0 3 1 $\sqrt{3/14}$ 125 5/2-23/21/2 $\sqrt{15/154}$ 1 0 1 $\sqrt{8/21}$ 146 4 126 5/2-25/21/2 $\sqrt{5/42}$ 0 $\sqrt{2/7}$ 147 1 5 1 127 5/2-27/21/2 $\sqrt{25/66}$ 148 1 0 6 1 $\sqrt{8/77}$ 128 5/2 -29/21/2 $\sqrt{2/7}$ 149 1 1 2 2 $\sqrt{1/66}$ 129 5/2-211/21/2 $\sqrt{20/77}$ 1501 1 2 $\sqrt{2/7}$ 5/2 3/2 3/2 130 -1 $\sqrt{5/11}$ 2 151 /1/84 131 5/2 -15/23/2 $\sqrt{1/3}$ 152 $\sqrt{32/105}$ 5/2 7/23/2 $-\sqrt{\frac{1}{111}}$ 132 -12 153 1 4 3 $\sqrt{289/924}$ 133 5/2-19/23/2 $-\sqrt{1/6}$ 2 154 1 3 $\sqrt{14/165}$ 134 5/2-111/23/2 $\sqrt{9/22}$ $-\sqrt{5/14}$ 2 3 155 1 6 135 5/20 5/25/2 $\sqrt{3/11}$ 156 1 3 4 4 $\sqrt{1/105}$ 136 5/20 7/25/2 $-\sqrt{1/2}$ $\sqrt{\frac{25/66}{.}}$ 1571 3 5 4 137 0 5/25/29/2 $\sqrt{5/22}$ $\sqrt{14/55}$ 158 1 3 6 4 138 5/20 11/25/2 $\sqrt{3/28}$ $-\sqrt{2/5}$ 2 159 -31 5/2 7/27/2139 1 $\sqrt{25/84}$ 2 160 -3-1 $\sqrt{1/11}$ 7/2 5/2 9/2140 1 $\sqrt{1/3}$ 2 $\sqrt{28/55}$ 161 -33 -1141 5/21 11/27/2 $\sqrt{15/77}$ $-\sqrt{\frac{4/11}{1}}$ 162 2 -34 -12 142 5/29/29/2 $\sqrt{5/84}$ 2 -35 $\sqrt{7/11}$ 163 -1143 5/22 11/29/2 $\sqrt{1/132}$ 2 164 6 $\sqrt{\frac{1/2}{\pi}}$ -3-1144 7/2-23/23/2 $-\sqrt{1/7}$ 165 2 -20 0 $\sqrt{1/3}$ 145 7/2-25/23/2 $-\sqrt{1/7}$ 166 2 -21 0 $\sqrt{2/15}$ 146 7/2-27/23/2 $\sqrt{1/6}$ 167 2 -23 0 $\sqrt{1/33}$ 7/2-29/23/2147 $\sqrt{7/22}$ 2 -20 $\sqrt{1/330}$ 148 7/2-211/23/2 $\sqrt{\frac{4/21}{-}}$ 169 2 -20 $\sqrt{5/12}$ 7/25/2 -15/2149 $\sqrt{3/77}$ 170 2 -20 $\sqrt{2/5}$ 150 7/2-17/25/2 $-\sqrt{\frac{5/28}{5}}$ 2 1 171 -11 $\sqrt{7/44}$ 151 7/2-19/25/2 $\sqrt{5/28}$ 2 -1172 2 1 $\sqrt{4/165}$ 152 7/2-111/25/2 $\sqrt{16/77}$ 2 173 -14 1 $\sqrt{7/15}$ 153 7/20 7/27/2 $\sqrt{9/28}$ $\sqrt{14/33}$ 1742 -15 1 0 9/27/2154 7/2 $\sqrt{5/44}$ 1752 -16 1 $\sqrt{6/55}$ 155 7/20 11/27/2 $-\sqrt{5/21}$ 176 2 0 2 $\sqrt{7/11}$ 7/29/2156 1 9/2 $-\sqrt{1/6}$ $\sqrt{4/11}$ 2 2 177 0 3 7/211/2157 1 9/2 $\sqrt{3/154}$ 178 2 0 2 4 11/2158 7/211/2 $\sqrt{1/3}$ 179 2 0 5 2 $\sqrt{8/33}$ 2 2 0 180 6 $-\sqrt{1/3}$ 2 1 3 181 3 $-\sqrt{1/11}$ 182 2 1 4 3 $\sqrt{1/6}$ 183 2 1 5 3 $\sqrt{9/22}$ 184 2 1 3 · \sqrt{5/11} 2 2 4 $\sqrt{6/11}$ 186 2 $-\sqrt{1/2}$ 2 187 3 5 5 $\sqrt{1/2}$ 188 3 5 $\sqrt{1/7}$ 0 189 3 -30 $\sqrt{9/28}$ 190 3 -31 0 $\sqrt{25/84}$ 191 3 -32 0 $\sqrt{1/6}$ 1923 -33 0 $\sqrt{9/154}$ 193 3 -34 0 $\sqrt{1/84}$ 194 3 -35 0 $\sqrt{1/924}$ 195 3 -36 0 $\sqrt{3/28}$ 3 -21 1 196 $\sqrt{25/84}$ 3 -22 1 197 $\sqrt{1/3}$ 3 3 198 -21 $\sqrt{15/77}$ 199 3 -24 1 $\sqrt{5/84}$ 200 3 -25 1 $\sqrt{1/132}$ 201 3 -21 $\sqrt{5/42}$ 3 2 202 -1 $\sqrt{\frac{1/3}{}}$ 203 -12 $\sqrt{27/77}$ 3 2 204 -1 $\sqrt{1/6}$ 3 205 -1 $\sqrt{1/33}$ 206 3 -16 2 $\sqrt{1/6}$ 0 3 207 3 $\sqrt{9/22}$ 208 3 0 3 4 $\sqrt{1/3}$ 209 3 0 3 $\sqrt{1/11}$ 3 3 2100 $\sqrt{3/11}$ 2113 4 $\sqrt{1/2}$ 3 4 212 1 5 $\sqrt{5/22}$ 3 4 1 6 213 $\sqrt{1/2}$ 3 2 5 5 214 $\sqrt{1/2}$ 2 3 6 5 215 216Table 22: $[j_1 \otimes j_2 = 7/2 \otimes 1/2]$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_1}{-7/2}$ $\frac{m_2}{-1/2}$ 1 Table 26: $[j_1 \otimes j_2 = 7/2 \otimes 5/2]$ $\sqrt{7/8}$ 2 -7/21/23 -3 $\sqrt{1/8}$ 3 -7/21/24 -3M -6 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{1/8}$ -5/2-1/24 3 -36 $\sqrt{7/8}$ $\sqrt{7/12}$ 5 -5/2-1/2-32 -7/2-3/25 -5 $-\sqrt{\frac{3}{4}}$ $\sqrt{5/12}$ -5/21/23 -23 -7/2-3/26 -56 $\sqrt{21/55}$ $\sqrt{1/4}$ 4 7 -5/21/2 4 -2-7/2-1/24 -4 $\sqrt{1/4}$ $-\sqrt{7/15}$ -3/2-1/23 -25 -7/2-1/25 -4 $\sqrt{5/33}$ $\sqrt{3/4}$ 6 9 -3/2-1/24 -2-7/2-1/26 -4 $-\sqrt{5/8}$ $\sqrt{7/24}$ 7 10 -3/21/23 -1-7/21/23 -3 $\sqrt{3/8}$ $\sqrt{189/440}$ 11 -3/21/24 -18 -7/21/24 $\sqrt{7/30}$ $\sqrt{3/8}$ -1/29 -7/21/2-1/2 $\sqrt{5/8}$ $\sqrt{1/22}$ 1/213 -1/2-1/2-110 -7/2 $-\sqrt{1/2}$ $\sqrt{\frac{5/18}{1}}$ -1/20 11 -7/23/214 1/23 $\sqrt{1/2}$ $\sqrt{7/18}$ -1/21/2 4 0 12 -7/23/23 -215 $\sqrt{1/2}$ $\sqrt{27/110}$ -7/24 1/20 13 3/2-216 -1/23 $-\sqrt{7/90}$ $\sqrt{1/2}$ 1/2-7/23/2-217 -1/24 0 14 5 $-\sqrt{\frac{3/8}{}}$ $\sqrt{1/99}$ 18 1/21/23 1 15 -7/23/26 -2 $\sqrt{5/8}$ $\sqrt{3/8}$ 19 1/21/24 1 16 -7/25/21 -1 $\sqrt[4]{5/8}$ $\sqrt{25/72}$ 20 3/2-1/23 1 17-7/25/22 -1 $-\sqrt{7/36}$ $\sqrt{3/8}$ 21 3/2-1/218 -7/25/23 -11 $-\sqrt{1/4}$ $\sqrt{3/44}$ 3/21/23 2 19 -7/25/24 $-\sqrt{1/72}$ $\sqrt{3/4}$ 3/21/22 20 -7/25/25 -123 4 $\sqrt{3/4}$ $\sqrt{1/792}$ 2 21 -7/25/25/2-1/26 -124 3 $\sqrt[4]{1/4}$ $\sqrt{5/12}$ 25 5/2-1/22 22 -5/2-5/25 -54 $\sqrt{\frac{1/8}{1/8}}$ $\sqrt{7/12}$ 23 26 5/21/23 3 -5/2-5/26 -5 $\sqrt{7/8}$ $\sqrt{24/55}$ 27 5/21/24 3 24 -5/2-3/24 -4 $\sqrt{7/8}$ $\sqrt{1/30}$ 28 7/2-1/23 3 25 -5/2-3/25 $\sqrt[4]{1/8}$ $\sqrt{35/66}$ 7/2-1/23 26 -5/2-3/2 $\sqrt{3/8}$ 30 7/21/227 -5/2-1/2 $\sqrt{\frac{3/440}{1}}$ 28 -5/2-1/2 $-\sqrt{\frac{3/10}{}}$ 29 -5/2-1/2-35 $\sqrt{7/22}$ -5/230 -1/26 -3 $\sqrt{20/63}$ 2 31 -5/21/2-2 $\sqrt{1/36}$ 32 -5/21/23 -2 $\sqrt{243/1540}$ 33 -5/21/24 -2 $\sqrt{16/45}$ 34-5/21/25 -2 $\sqrt{14/99}$ 35 -5/21/26 -2 $\sqrt{15/56}$ 36 -5/23/21 $-\sqrt{5/504}$ 37 -5/23/22 $\sqrt{5/36}$ 3/2 38 -5/23 -1 $\sqrt{\frac{507/1540}{507/1540}}$ 39 -5/23/2 4 -1 $-\sqrt{529/2520}$ 40 3/2-5/25 -1 $\sqrt{35/792}$ 41 -5/23/26 -142 -5/25/2'3/28 $\sqrt{25/84}$ 43 -5/25/22 0 5/244 -5/2 $\sqrt{15/77}$ 45 -5/25/24 Table 23: $[j_1 \otimes j_2 = 7/2 \otimes 1]$ $\sqrt{5/84}$ 46 -5/25/25 0 $\sqrt{1/132}$ 6 0 47 -5/25/2 $\frac{M}{-9/2}$ $\frac{\overline{m}_1}{-7/2}$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{2/11}$ 9/2 48 -3/2-5/24 -4 $\sqrt{7/9}$ 2 -7/20 7/2 -7/2 $\sqrt{\frac{1}{2}}$ 49 -3/2-5/25 -4 $\sqrt{\frac{2}{9}}$ 3 -7/20 9/2-7/2 $\sqrt{7/22}$ 50 -3/2-5/26 -4 $\sqrt{3/4}$ 5/2-5/24 -7/21 $\sqrt{1/4}$ 51-3/2-3/23 -3 $\sqrt{2/9}$ 5 -7/21 7/2-5/2 $\sqrt{49/220}$ 52-3/2-3/24 -3 $\sqrt{1/36}$ 6 -7/21 9/2-5/2 $\sqrt{1/20}$ 53 -3/2-3/25 $\sqrt{\frac{2}{9}}$ $\sqrt{21/44}$ 7 -5/2-17/2-7/254-3/2-3/26 -3 $\sqrt[7]{7/9}$ $\sqrt{5/21}$ -7/2-5/29/2-255 -3/2-1/22 $-\sqrt{\frac{3}{14}}$ -5/20 5/2-5/2 $\sqrt{1/12}$ 56 -3/2-1/23 -2 $-\sqrt{\frac{25/63}{}}$ 7/2 -5/210 -5/20 $\sqrt{289/1540}$ -257 -3/2-1/24 $\sqrt{7/18}$ -5/211 -5/20 9/2 $\sqrt{1/15}$ 58 -3/2-1/25 -2 $\sqrt{15/28}$ -3/212 -5/21 5/2 $\sqrt{14/33}$ 59 -3/2-1/26 -2 $-\sqrt{5/28}$ $-\sqrt{8/21}$ 7/2-3/213 -5/21 60 -3/21/21 $\sqrt{1/12}$ $\sqrt{5/84}$ 14 -5/21 9/2-3/261 1/2-3/2 $\sqrt{1/28}$ 15 -3/2-15/2-5/2 $\sqrt{5/24}$ 62 -3/21/23 $\sqrt{8/21}$ 16 -3/2-17/2-5/2 $\sqrt{\frac{1/3080}{1}}$ 63 -3/21/24 -1 $\sqrt{7/12}$ 9/2-5/2 $\sqrt{121/420}$ 17-3/2-11/2-164 -3/25 $-\sqrt{5/14}$ 18 -3/20 5/2-3/2 $\sqrt{35/132}$ 1/26 -165 -3/2 $-\sqrt{1/7}$ $\sqrt{5/28}$ -3/27/2 -3/219 0 66 -3/23/21 0 $\sqrt{1/2}$ 9/2-3/220 -3/20 $\sqrt{5/28}$ 67 -3/23/22 0 $\sqrt{5/14}$ 21 -1/2-3/21 5/2 $\sqrt{16/77}$ 68 -3/23/24 0 $\sqrt{10/21}$ 22 -3/21 7/2-1/2 $\sqrt{9/28}$ 69 -3/23/25 0 $\sqrt{1/6}$ 23 -3/21 9/2-1/2 $\sqrt{5/44}$ 70 -3/23/26 $\sqrt{3/28}$ 24 -1/2-15/2-3/2 $\sqrt{1/56}$ 71-3/25/21 $\sqrt{10/21}$ 25 -1/27/2-3/2 $\sqrt{25/168}$ 72 5/22 -3/21 $\sqrt{5/12}$ 26 -1/2-19/2-3/2 $\sqrt{1/3}$ 73 -3/25/2 3 1 $-\sqrt{\frac{3}{7}}$ 27 5/2 -1/2-1/20 $\sqrt{25/77}$ 5/2 74 -3/24 1 $-\sqrt{1/63}$ 7/2 -1/2 $\sqrt{25/168}$ 28 -1/20 75 -3/25/25 1 $\sqrt{5/9}$ -1/2 $\sqrt{7/264}$ 29 0 9/2-1/276 -3/25/26 1 $\sqrt{3/14}$ $\sqrt{1/12}$ 30 -1/21 5/21/277 -1/2-5/23 -3 $\sqrt{32/63}$ $\sqrt{\frac{15/44}{15}}$ 31 -1/21 7/21/278 -1/2-5/2 $\sqrt[.]{5/18}$ $\sqrt{\frac{5/12}{1}}$ 32 -1/21 9/21/279 -1/2-5/25 -3 $\sqrt{3/14}$ 33 1/2-15/2-1/2 $\sqrt{7/44}$ 80 -1/2-5/26 -3 $\sqrt{32/63}$ 7/2-1/2 $-\sqrt{\frac{8/63}{8}}$ 34 1/2-1/22 -281 -3/2 $\sqrt{5/18}$ 35 1/2-19/2-1/2 $-\sqrt{5/18}$ -1/2-282 -3/23 $-\sqrt{\frac{3/7}{2}}$ 1/25/2 1/236 0 $\sqrt{3/154}$ 83 -1/2-3/24 -2 $\sqrt{1/63}$ $\sqrt{\frac{2/9}{}}$ 1/2 0 7/21/237 84 -1/2-3/25 -2 $\sqrt{5/9}$ 1/21/29/238 0 $\sqrt{35/99}$ 85 -1/2-3/26 -2 $\sqrt{3/28}$ $\sqrt{3/28}$ 39 1/21 5/23/286 -1/2-1/21 -1 $\sqrt{10/21}$ $\dot{\sqrt{7/36}}$ 40 1/21 7/23/287 -1/2-1/2 $\sqrt{5/12}$ $-\sqrt{1/72}$ 41 1/21 9/23/288 -1/2-1/23 $\sqrt{5/14}$ 3/25/2 $\sqrt{21/88}$ 42 1/289 -1/2-1/24 -1 $\sqrt{10/21}$ 43 3/2-17/21/2 $\sqrt{1/252}$ 90 -1/2-1/25 -1 $\sqrt{\frac{1/6}{\cdot}}$ 9/2 1/2 $\sqrt{175/396}$ 44 3/2-191 -1/2-1/26 -1 $-\sqrt{\frac{5/14}{5}}$ 0 5/2 3/2 45 3/2 $\sqrt{3/14}$ 92 -1/21/21 0 $\sqrt{1/7}$ $\sqrt{1/42}$ 7/23/2 46 3/20 93 -1/21/22 0 $\sqrt{1/2}$ $\sqrt{\frac{1}{6}}$ 9/23/247 3/20 94-1/21/23 0 $\sqrt{1/28}$ 48 3/21 5/25/2 $\sqrt{15/154}$ 95 -1/21/2 $-\sqrt{8/21}$ 49 3/21 7/25/2 $-\sqrt{5/42}$ 96 -1/21/25 $\sqrt{7/12}$ 50 3/21 9/25/2 $\sqrt{25/66}$ 97 -1/21/26 0 $\sqrt{15/28}$ 51 5/23/2 $\sqrt{3/56}$ 5/2-13/2 98 -1/21 1 $\sqrt{\frac{8/21}{1}}$ 52 5/2-17/23/2 $\sqrt{121/504}$ -1/22 99 3/21 $\sqrt{1/12}$ 9/2 3/253 5/2-1 $\sqrt{\frac{1/9}{}}$ 100 -1/23/23 1 $-\sqrt{\frac{3/14}{}}$ 5/2 5/254 5/20 $\sqrt{3/77}$ 101 -1/23/24 1 $\sqrt{25/63}$ 7/25/255 5/20 $/_{169/504}$ 102 -1/23/25 1 $\sqrt{7/18}$ 56 5/20 9/25/2 $\sqrt{175/792}$ 103 3/2-1/26 1 $-\sqrt{\frac{2/9}{2}}$ 57 5/21 7/27/2 $\sqrt{5/126}$ 104 -1/25/22 2 $\sqrt{\frac{7/9}{5}}$ $\sqrt{\frac{2}{9}}$ 58 5/21 9/27/2105 -1/25/23 $\sqrt{\frac{3}{4}}$ 5/259 7/25/2 $\sqrt{30/77}$ 5/22 106 -1/24 $\sqrt{\frac{2/9}{2}}$ $-\sqrt{5/18}$ 60 7/2-17/25/2107 -1/25/2 5 2 $\sqrt{1/36}$ 61 9/2 7/2-15/2 $\sqrt{7/99}$ -1/25/2108 6 2 $\sqrt{7/9}$ 0 7/2 $\sqrt{5/126}$ 62 7/27/2109 1/2-5/22 -2 $\sqrt{2/9}$ $\sqrt{\frac{2}{9}}$ 63 7/20 9/27/2110 1/2-5/23 -264 7/29/29/2 $\sqrt{30/77}$ 111 1/2-5/24 -2 $\sqrt{5/18}$ 1/2112 -5/2 $\sqrt{7/99}$ 113 1/2-5/2 $-\sqrt{3/56}$ 114 1/2-3/2 $-\sqrt{121/504}$ 1/2 115 -1-3/22 $\sqrt{1/9}$ 1/2-1116 -3/23 $/_{3/77}$ 117 1/2-3/24 -1118 1/2-3/25 -1/169/504 $\sqrt{175/792}$ 1191/2-3/26 -1 $\sqrt{\frac{3/14}{-}}$ 120 1/20 -1/21 $\sqrt{1/42}$ 121 1/2 -1/22 0 $-\sqrt{1/6}$ 1/2 122 -1/23 0 $\sqrt{15/154}$ 123 1/20 -1/24 $\sqrt{5/42}$ 124 1/2-1/25 0 $\sqrt{25/66}$ 1/2125 -1/26 0 $-\sqrt{3/28}$ 126 1/21/21 1 $\sqrt{7/36}$ 127 1/21/22 $\sqrt{1/72}$ 128 1/21/23 $\sqrt{\frac{21/88}{1}}$ Table 24: $[j_1 \otimes j_2 = 7/2 \otimes 3/2]$ 129 1/21/2 $\sqrt{1/252}$ 130 1/21/25 $\sqrt{175/396}$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ 131 1/21/26 1 $-\sqrt{\frac{8/63}{}}$ 2 2 132 1/23/2 $\sqrt{7/10}$ 2 -7/2-1/24 -4 $\sqrt{5/18}$ 3/2 $\sqrt{3/10}$ 133 1/23 2 3 -7/2-1/25 -4 $\sqrt{3/154}$ $\sqrt[7]{7/12}$ 134 1/23/24 2 4 -7/21/23 -3 $-\sqrt{7/20}$ $\sqrt{2/9}$ 1351/23/25 2 -7/21/24 $\sqrt{35/99}$ $\sqrt{1/15}$ 136 1/23/26 2 -7/21/2-3 $\sqrt{1/12}$ $-\sqrt{5/8}$ 5/2137 1/23 7 -7/22 3/2-2 $\sqrt{15/44}$ $\sqrt{7/24}$ 138 1/25/24 3 -7/28 3/23 -2 $-\sqrt{5/12}$ 139 1/25/25 3 $-\sqrt{3/40}$ 9 -7/23/24 -2 $\sqrt{7/44}$ 1/25/2140 6 3 $\sqrt{1/120}$ -7/210 3/25 -2/1/56 $\sqrt{3/10}$ 141 3/2-5/21 -111 -5/2-3/24 -4 $\sqrt{25/168}$ $\sqrt{7/10}$ 142 3/2-5/22 -112 -5/2-3/2-45 $\sqrt{1/3}$ $-\sqrt{\frac{1}{3}}$ 143 3/2-5/23 -1-5/213 -1/23 -3 $\sqrt{25/77}$ $-\sqrt{1/5}$ 144 3/2-5/24 14 -5/2-1/24 -3 $\sqrt{25/168}$ 145 3/2-5/2 $\sqrt{7/15}$ -5/2-1/215 5 -3 $\sqrt{7/264}$ $\sqrt{15/56}$ 146 3/2-5/26 -5/21/2 2 -216 $-\sqrt{\frac{5/28}{-}}$ 147 3/2-3/21 $\sqrt{1/8}$ 17 -5/21/23 -2 $-\sqrt{5/28}$ 148 3/2-3/22 0 $\sqrt{121/280}$ 18 -5/21/24 -2 $\sqrt{16/77}$ $\sqrt{7/40}$ 0 149 3/2-3/24 19 -5/21/25 -2 $\sqrt{9/28}$ $-\sqrt{5/14}$ 150 3/2-3/25 0 20 -5/23/22 -1 $\sqrt[.]{5/44}$ 151 3/2-3/26 0 $\sqrt{5/12}$ 21 -5/23/23 -1 $\sqrt{5/28}$ $\sqrt{27/140}$ 1523/2-1/21 1 -5/222 3/2 $-\sqrt{\frac{5/84}{5}}$ $\sqrt{\frac{1/30}{.}}$ 153 3/2-1/22 1 -5/23/2-1 $\sqrt{5/24}$ $\sqrt{1/12}$ 3/2154-1/23 1 -3/2-3/224 3 -3 $\sqrt{1/3080}$ $\sqrt{9/20}$ 1553/2-1/24 1 -3/225 -3/24 -3 $\sqrt{121/420}$ $\sqrt[.]{7/15}$ 3/2 156 -1/25 1 -3/226 -3/25 -3 $\sqrt{35/132}$ $-\sqrt{5/56}$ 3/2 157 -1/26 1 27 -3/2-1/22 -2 $\sqrt{5/21}$ $-\sqrt{\frac{3/8}{1}}$ 3/21/22 2 158 28 -3/2-1/23 -2 $\sqrt{1/12}$ 3/2 1/2159 3 2 $\sqrt{3/280}$ 29 -3/2-1/24 -2 $\sqrt{289/1540}$ 160 3/21/24 2 $\sqrt{21/40}$ -3/2-1/25 -2 $\sqrt{1/15}$ $\sqrt{5/14}$ 161 3/21/25 2 31 -3/21/22 -1 $\sqrt{14/33}$ $-\sqrt{\frac{12/35}{12}}$ 162 3/21/26 2 -3/21/232 4 -1 $\sqrt{1/4}$ $\sqrt{3/10}$ 163 3/23/233 -3/21/25 -1 $\sqrt{49/220}$ $-\sqrt{5/28}$ 164 3/23/234 -3/23/22 0 $-\sqrt{1/20}$ $\sqrt{5/12}$ 165 3/23/25 3 35 -3/23/23 0 $\sqrt{21/44}$ $-\sqrt{\frac{9/28}{1}}$ 6 166 3/23/23 36 -3/23/24 0 $\sqrt{2/11}$ 5/2 $\sqrt{1/12}$ 167 3/24 4 37 -3/23/20 $\sqrt{1/2}$ $\sqrt{1/56}$ 168 3/25/25 4 38 -1/2-3/22 -2 $\sqrt{7/22}$ $\sqrt{5/24}$ 169 3/25/26 4 -1/239 -3/2-2 $\sqrt{3/28}$ $\sqrt{27/56}$ 170 5/2-5/21 0 40 -1/2-3/24 $\sqrt{25/84}$ $\sqrt{7/24}$ 171 2 5/2-5/2-1/241 -3/25 -2 $\sqrt{1/3}$ $-\sqrt{3/14}$ 1725/2-5/23 -1/22 42 -1/2-1 $\sqrt{15/77}$ $-\sqrt{1/4}$ 1735/2 -5/24 0 -1/2-1/243 3 -1 $\sqrt{5/84}$ 5/2 0 $\sqrt{1/28}$ 174 -5/25 44 -1/2-1/24 -1 $\sqrt{1/132}$ $\sqrt{1/2}$ 175 5/2 -5/26 0 45 -1/2-1/25 -1 $-\sqrt{15/56}$ $\sqrt{9/28}$ 5/2176 -3/21 1 46 -1/21/22 0 $-\sqrt[3]{5/504}$ $-\sqrt{\frac{1}{12}}$ 177 5/2-3/22 1 -1/21/247 3 0 $-\sqrt{\frac{5/28}{5}}$ $\sqrt{5/36}$ 178 5/2-3/23 1 48 -1/21/24 0 $\sqrt{507/1540}$ 179 5/2-3/24 1 $\sqrt{5/12}$ -1/21/20 49 5 $\sqrt{529/2520}$ $-\sqrt{\frac{1}{14}}$ 180 5/2-3/25 -1/23/22 1 50 $\sqrt{35/792}$ $\sqrt{1/3}$ 181 5/2-3/26 -1/251 3/23 1 $-\sqrt{\frac{20/63}{-}}$ $-\sqrt{\frac{3/7}{}}$ 182 5/2-1/22 2 52 -1/23/24 1 $\sqrt{1/36}$ 183 5/2-1/23 2 $\sqrt{1/6}$ 53 -1/23/25 1 $\sqrt{243/1540}$ $\sqrt{1/14}$ 184 5/2-1/24 2 54 1/2-3/2-1 $\sqrt{16/45}$ $\sqrt{\frac{1/3}{-}}$ 185 5/2-1/25 2 1/2-3/2 $\sqrt{14/99}$ $\sqrt{3/7}$ 186 5/2-1/26 2 1/2-3/2 $\sqrt{\frac{3/8}{}}$ $\sqrt{1/6}$ 187 5/21/23 1/2-3/257 $\sqrt{3/440}$ $-\sqrt{9/28}$ 188 5/21/23 1/2 -1/22 58 0 $\sqrt{\frac{3/10}{1}}$ $-\sqrt{1/12}$ 189 5/21/25 3 1/2-1/23 0 59 $\sqrt{7/22}$ $\sqrt{5/28}$ 190 5/2 1/26 3 1/2-1/20 60 4 $-\sqrt{\frac{24/55}{2}}$ $\sqrt[.]{5/12}$ 191 5/2 3/24 4 61 1/2-1/25 0 $\sqrt{1/30}$ $\sqrt[.]{3/14}$ 192 5/2 3/25 62 1/21/22 1 $\sqrt{35/66}$ $-\sqrt{1/4}$ 5/23/2193 6 4 63 1/21/23 1 $-\sqrt{5/12}$ $-\sqrt{1/28}$ 194 5/25/25 5 1/21/264 4 $\sqrt{7/12}$ $\sqrt{1/2}$ 195 5/25/26 5 1/2 1/265 5 1 $\sqrt{3/8}$ $-\sqrt{1/56}$ 196 7/2-5/21/23/22 2 66 $\sqrt{25/72}$ 197 $\sqrt{\frac{5/24}{1}}$ 7/2-5/21/22 3/23 67 $-\sqrt{\frac{27/56}{}}$ 198 7/2-5/268 1/23/24 2 $\sqrt{\frac{3/44}{1}}$ $\sqrt{7/24}$ 199 7/2-5/24 1/22 69 3/25 $\sqrt{1/72}$ $\sqrt{5/28}$ 200 7/2-5/25 70 3/2-3/22 0 $\sqrt{1/792}$ $\sqrt{5/12}$ 201 7/2-5/26 1 713/2-3/23 0 $\sqrt{5/18}$ $\sqrt{9/28}$ 202 7/2-3/22 2 72 3/2-3/2 $\sqrt[\bullet]{1/12}$ $\sqrt{7/18}$ 203 7/2-3/23 2 73 3/2-3/2 $\sqrt{27/110}$ $-\sqrt{5/14}$ 2047/2-3/24 2 74 3/2-1/2 $\sqrt{\frac{7/90}{1}}$ 205 $\sqrt{12/35}$ 7/2-3/25 3/2 -1/275 4 1 $\sqrt{1/99}$ $\sqrt{3/10}$ 206 7/2-3/26 3/2-1/276 5 1 $\sqrt{7/24}$ $\sqrt[.]{5/56}$ 207 7/2 -1/23 3 3/21/22 2 77 $\sqrt{189/440}$ $-\sqrt{3/8}$ 208 7/24 -1/23 1/278 3/23 2 $\sqrt{7/30}$ 209 7/2-1/25 3 79 3/21/24 2 $\sqrt{3/280}$

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	$\begin{array}{c} m_1 \\ -7/2 \\ -7/$	$\begin{array}{c} m_2 \\ -7/2 \\ -5/2 \\ -3/2 \\ -3/2 \\ -3/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ 1/2 \\ 1/2 \\ 1/2 \\ 3/2 \\ 3/2 \\ 3/2 \\ 3/2 \\ 3/2 \\ 3/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 5/2 \\ 7/2 \\ 7/2 \\ 7/2 \end{array}$	J 7 6 7 5 6 7 4 5 6 7 2 3 4 5 6 7 2 3 4 5 6 7 2 3 4 5 6 7 1 2 3 4 5 6 7 7 1 1 1 2 3 4 4 5 6 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	$\begin{array}{c c} M \\ -7 \\ -6 \\ -6 \\ -5 \\ -5 \\ -4 \\ -4 \\ -4 \\ -3 \\ -3 \\ -3 \\ -3 \\ -3$	$ \begin{array}{c} \langle j_1 j_2 m_1 m_2 j_1 j_2 JM \rangle \\ \hline 1 \\ -\sqrt{1/2} \\ \sqrt{1/2} \\ \sqrt{7/26} \\ -\sqrt{1/2} \\ \sqrt{3/13} \\ -\sqrt{7/44} \\ \sqrt{21/52} \\ -\sqrt{15/44} \\ \sqrt{5/52} \\ \sqrt{7/66} \\ -\sqrt{7/22} \\ \sqrt{14/39} \\ -\sqrt{2/11} \\ \sqrt{5/143} \\ -\sqrt{1/12} \\ \sqrt{35/132} \\ -\sqrt{15/44} \\ \sqrt{35/156} \\ -\sqrt{5/66} \\ \sqrt{3/286} \\ \sqrt{1/12} \\ -\sqrt{1/4} \\ \sqrt{7/22} \\ -\sqrt{5/52} \\ -\sqrt{1/44} \\ \sqrt{1/429} \\ -\sqrt{1/8} \\ \sqrt{7/24} \\ \end{array} $
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53	$\begin{array}{c} -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -5$	7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 -7/2 -5/2 -5/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2	2 3 4 5 6 7 5 7 4 5 6 7 3 4 5 6 7 2 3 4 5 6 7 2 3 4 5 6 6 7 7 2 3 4 5 6 7 2 3 4 5 6 7 2 3 4 5 6 7 2 3 4 5 7 2 3 4 5 7 2 3 3 4 5 7 2 3 3 4 4 5 5 7 2 3 3 4 5 7 2 3 4 5 5 7 2 3 4 5 5 7 2 3 3 4 5 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 4 5 7 2 3 3 3 3 4 5 7 2 3 3 4 5 7 2 3 3 3 4 5 3 3 3 4 5 3 3 3 3 4 5 7 5 7 2 3 3 3 7 3 3 4 5 7 2 3 3 4 5 7 7 2 3 3 3 7 2 3 3 3 4 5 7 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 -6 -5 -5 -4 -4 -4 -3 -3 -3 -3 -3 -2 -2 -2	$ \begin{array}{c} \sqrt{7/24} \\ \sqrt{49/264} \\ -\sqrt{7/88} \\ \sqrt{7/312} \\ -\sqrt{1/264} \\ \sqrt{1/3432} \\ \sqrt{1/2} \\ \sqrt{1/2} \\ -\sqrt{6/13} \\ \sqrt{7/13} \\ \sqrt{15/44} \\ -\sqrt{5/52} \\ -\sqrt{7/44} \\ \sqrt{21/52} \\ -\sqrt{8/33} \\ \sqrt{2/11} \\ \sqrt{1/78} \\ -\sqrt{7/22} \\ \sqrt{35/143} \\ \sqrt{5/28} \\ -\sqrt{9/44} \\ \sqrt{1/308} \\ \sqrt{9/52} \end{array} $
54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79	$\begin{array}{c} -5/2 \\ -5$	1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7	6 7 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 1 2 3 4 5 6 6 7 7 1 1 2 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7	-2 -2 -1 -1 -1 -1 -1 -1 -1 -0 0 0 0 0 0 1 1 1 1	$\begin{array}{c} -\sqrt{7/22} \\ \sqrt{35/286} \\ -\sqrt{1/7} \\ \sqrt{4/21} \\ -\sqrt{1/66} \\ -\sqrt{15/154} \\ \sqrt{80/273} \\ -\sqrt{7/33} \\ \sqrt{7/143} \\ \sqrt{1/8} \\ -\sqrt{25/168} \\ \sqrt{1/168} \\ \sqrt{25/264} \\ -\sqrt{169/616} \\ \sqrt{529/2184} \\ -\sqrt{25/264} \\ \sqrt{49/3432} \\ \sqrt{1/12} \\ -\sqrt{1/4} \\ \sqrt{7/22} \\ -\sqrt{5/52} \\ -\sqrt{1/44} \\ \sqrt{1/429} \\ \sqrt{7/26} \\ \sqrt{1/2} \\ \end{array}$
80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104	-3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2	-7/2 -5/2 -5/2 -5/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2	7 4 5 6 7 3 5 7 2 3 4 5 6 7 1 2 3 4 5 6 7 0 1 2 3	-5 -4 -4 -4 -3 -3 -3 -3 -2 -2 -2 -2 -1 -1 -1 -1 -1 -1 0 0 0	$\begin{array}{c} \sqrt{3/13} \\ -\sqrt{15/44} \\ -\sqrt{5/52} \\ \sqrt{7/44} \\ \sqrt{21/52} \\ \sqrt{10/33} \\ -\sqrt{10/39} \\ \sqrt{63/143} \\ -\sqrt{5/21} \\ \sqrt{1/33} \\ \sqrt{12/77} \\ -\sqrt{4/39} \\ -\sqrt{7/66} \\ \sqrt{105/286} \\ \sqrt{5/28} \\ -\sqrt{5/84} \\ -\sqrt{5/66} \\ \sqrt{27/154} \\ \sqrt{1/1092} \\ -\sqrt{35/132} \\ \sqrt{35/143} \\ -\sqrt{1/8} \\ \sqrt{3/56} \\ \sqrt{3/56} \\ -\sqrt{49/264} \\ \end{array}$
105 106 107 108 109 110 111 112 113 114 115 116 117 118 120 121 122 123 124 125 126 127 128 129 130 131	-3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2	3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -5/2 -5/2 -5/2 -5/2 -3/2 -3/2	4 5 6 7 1 2 3 4 5 6 7 4 5 6 6 7 3 4 5 6 6 7 2 3 4 5 5 6 7 3 4 5 5 6 7 2 3 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	0 0 0 0 1 1 1 1 1 1 2 2 2 2 2 2 2 4 -4 -4 -4 -3 -3 -3 -3 -3 -2 -2 -2	$\begin{array}{c} \sqrt{9/616} \\ \sqrt{289/2184} \\ -\sqrt{27/88} \\ \sqrt{147/1144} \\ -\sqrt{1/7} \\ \sqrt{4/21} \\ -\sqrt{1/66} \\ -\sqrt{15/154} \\ \sqrt{80/273} \\ -\sqrt{7/33} \\ \sqrt{7/143} \\ -\sqrt{1/12} \\ \sqrt{35/132} \\ -\sqrt{15/44} \\ \sqrt{35/156} \\ -\sqrt{5/66} \\ \sqrt{3/286} \\ \sqrt{7/44} \\ \sqrt{21/52} \\ \sqrt{15/44} \\ \sqrt{5/52} \\ -\sqrt{8/33} \\ -\sqrt{2/11} \\ \sqrt{1/78} \\ \sqrt{7/22} \\ \sqrt{35/143} \\ \sqrt{5/21} \\ \sqrt{1/33} \\ \end{array}$
133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159	-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2	-3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2	4 5 6 7 1 2 3 4 5 6 7 2 3 4 5 5	-2 -2 -2 -1 -1 -1 -1 0 0 0 0 0 1 1 1 1 1 2 2 2	$-\sqrt{12/77} \\ -\sqrt{4/39} \\ \sqrt{7/66} \\ \sqrt{105/286} \\ -\sqrt{4/21} \\ \sqrt{2/11} \\ -\sqrt{20/91} \\ \sqrt{175/429} \\ \sqrt{1/8} \\ -\sqrt{1/168} \\ -\sqrt{25/168} \\ \sqrt{3/88} \\ \sqrt{81/616} \\ -\sqrt{75/728} \\ -\sqrt{25/264} \\ \sqrt{368/1031} \\ \sqrt{5/28} \\ -\sqrt{5/66} \\ \sqrt{27/154} \\ \sqrt{1/1092} \\ -\sqrt{35/132} \\ \sqrt{35/143} \\ \sqrt{5/28} \\ -\sqrt{9/44} \\ \sqrt{1/308} \\ \sqrt{9/52} \\ -\sqrt{9/44} \\ \sqrt{1/308} \\ \sqrt{9/52} \\ -\sqrt{9/52} \\ -9/52$
160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 180 181 182 183 184 185 186	-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	5/2 5/2 7/2 7/2 7/2 7/2 7/2 7/2 -7/2 -7/2 -7/	6 7 3 4 5 6 7 2 3 4 5 6 7 1 2 3 4 5 6 7 0 1 2 2	2 3 3 3 3 3 -3 -3 -3 -3 -2 -2 -2 -2 -1 -1 -1 -1 -1 -1 0 0 0	$\begin{array}{c} -\sqrt{7/22} \\ \sqrt{35/286} \\ \sqrt{7/66} \\ -\sqrt{7/22} \\ \sqrt{14/39} \\ -\sqrt{2/11} \\ \sqrt{5/143} \\ \sqrt{7/66} \\ \sqrt{7/22} \\ \sqrt{14/39} \\ \sqrt{2/11} \\ \sqrt{5/143} \\ -\sqrt{5/28} \\ -\sqrt{9/44} \\ -\sqrt{1/308} \\ \sqrt{9/52} \\ \sqrt{7/22} \\ \sqrt{35/286} \\ \sqrt{5/28} \\ \sqrt{5/28} \\ \sqrt{5/28} \\ \sqrt{5/84} \\ -\sqrt{5/66} \\ -\sqrt{27/154} \\ \sqrt{1/1092} \\ \sqrt{35/132} \\ \sqrt{35/143} \\ -\sqrt{1/8} \\ -\sqrt{1/168} \\ \sqrt{25/168} \\ \end{array}$
188 189 190 191 192 193 194 195 196 197 198 200 201 202 203 204 205 206 207 208 209 211 212 213	1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 -7/2 -7/2	3 4 5 6 7 1 3 5 7 2 3 4 5 6 7 3 4 5 6 7 4 5 6 7 2 3 .	0 0 0 0 1 1 1 2 2 2 2 2 3 3 3 3 4 4 4 4 4 4 -2 -2 -2	$ \sqrt{3/88} - \sqrt{81/616} - \sqrt{75/728} \\ -\sqrt{75/728} \\ \sqrt{25/264} \\ \sqrt{368/1031} - \sqrt{4/21} \\ -\sqrt{2/11} - \sqrt{20/91} \\ \sqrt{175/429} - \sqrt{5/21} \\ \sqrt{1/33} \\ \sqrt{12/77} - \sqrt{4/39} \\ -\sqrt{7/66} \\ \sqrt{105/286} - \sqrt{8/33} \\ \sqrt{2/11} \\ \sqrt{1/78} - \sqrt{7/22} \\ \sqrt{35/143} - \sqrt{7/44} \\ \sqrt{21/52} - \sqrt{15/44} \\ \sqrt{5/52} \\ \sqrt{1/12} \\ \sqrt{35/132} \\ \sqrt{17/144} $
214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240	3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2	-7/2 -7/2 -7/2 -7/2 -7/2 -7/2 -5/2 -5/2 -5/2 -5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2	4 5 6 7 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 1 2 2 3 4 5 6 7 1 1 2 1 2 3 4 5 6 6 7 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	-2 -2 -2 -1 -1 -1 -1 -1 -1 -1 0 0 0 0 0 1 1 1 1	$ \sqrt{15/44} \sqrt{35/156} \sqrt{5/66} \sqrt{5/66} \sqrt{5/66} \sqrt{3/286} -\sqrt{1/7} -\sqrt{4/21} -\sqrt{1/66} \sqrt{15/154} \sqrt{80/273} \sqrt{7/33} \sqrt{7/143} \sqrt{7/143} \sqrt{1/8} \sqrt{3/56} -\sqrt{3/56} -\sqrt{49/264} -\sqrt{9/616} \sqrt{289/2184} \sqrt{27/88} \sqrt{147/1144} \sqrt{5/28} \sqrt{5/84} -\sqrt{5/66} -\sqrt{27/154} \sqrt{1/1092} \sqrt{35/132} \sqrt{35/143} \sqrt{5/21} $
241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 266 257 262 263 264 265 266 267	3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2	1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 5/2 5/2 5/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2 -7/2 -7/2	3 4 5 6 7 3 5 7 4 5 6 7 1 2 3 4 5 6 7 0 1 2 3 4	2 2 2 2 3 3 3 4 4 4 5 5 -1 -1 -1 -1 -1 -1 0 0 0 0	$\begin{array}{c} \sqrt{1/33} \\ -\sqrt{12/77} \\ -\sqrt{4/39} \\ \sqrt{7/66} \\ \sqrt{105/286} \\ \sqrt{10/33} \\ -\sqrt{10/39} \\ \sqrt{63/143} \\ \sqrt{15/44} \\ -\sqrt{5/52} \\ -\sqrt{7/44} \\ \sqrt{21/52} \\ \sqrt{7/26} \\ -\sqrt{1/2} \\ \sqrt{3/13} \\ \sqrt{1/12} \\ \sqrt{1/4} \\ \sqrt{7/22} \\ \sqrt{5/22} \\ \sqrt{5/52} \\ \sqrt{1/44} \\ \sqrt{1/429} \\ -\sqrt{1/8} \\ -\sqrt{1/168} \\ \sqrt{25/264} \\ \sqrt{169/616} \\ \end{array}$
268 269 270 271 272 273 274 275 276 277 278 280 281 282 283 284 285 286 287 288 299 291 292 293 294	5/2 5/2 5/2 5/2 5/2 5/2 5/2 5/2 5/2 5/2	-5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 5/2 5/2	5 6 7 1 2 3 4 5 6 7 2 3 4 5 6 7 3 4 5 6 7 4 5 6 7 4 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	0 0 0 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 3 3 3 3 4 4 4 4 4 5 5 5	$ \sqrt{529/2184} $ $ \sqrt{529/264} $ $ \sqrt{49/3432} $ $ -\sqrt{1/7} $ $ -\sqrt{4/21} $ $ -\sqrt{1/66} $ $ \sqrt{15/154} $ $ \sqrt{80/273} $ $ \sqrt{7/33} $ $ \sqrt{7/143} $ $ -\sqrt{5/28} $ $ -\sqrt{9/44} $ $ -\sqrt{1/308} $ $ \sqrt{9/52} $ $ \sqrt{7/22} $ $ \sqrt{35/286} $ $ -\sqrt{8/33} $ $ -\sqrt{2/11} $ $ \sqrt{1/78} $ $ \sqrt{7/22} $ $ \sqrt{35/143} $ $ -\sqrt{15/44} $ $ -\sqrt{5/52} $ $ \sqrt{7/44} $ $ \sqrt{21/52} $ $ -\sqrt{6/13} $ $ \sqrt{7/13} $
294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321	5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7	5/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2 -7/2	7 6 7 0 1 2 3 4 5 6 7 1 2 3 4 5 6 7 7 2 3 4 5 6 7 7 2 3 4 5 6 6 7 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	5 6 6 0 0 0 0 0 0 0 1 1 1 1 1 1 2 2 2 2 2 2 3 3 3 3 3 3 3 3	$\begin{array}{c} \sqrt{7/13} \\ -\sqrt{1/2} \\ \sqrt{1/2} \\ \sqrt{1/8} \\ \sqrt{7/24} \\ \sqrt{7/24} \\ \sqrt{49/264} \\ \sqrt{7/88} \\ \sqrt{7/312} \\ \sqrt{1/264} \\ \sqrt{1/3432} \\ \sqrt{1/12} \\ \sqrt{1/4} \\ \sqrt{7/22} \\ \sqrt{5/22} \\ \sqrt{5/52} \\ \sqrt{1/44} \\ \sqrt{1/429} \\ \sqrt{1/12} \\ \sqrt{35/132} \\ \sqrt{15/44} \\ \sqrt{35/156} \\ \sqrt{5/66} \\ \sqrt{3/286} \\ \sqrt{7/66} \\ \sqrt{7/22} \\ \sqrt{14/39} \\ \sqrt{2/11} \\ \end{array}$
321 322 323 324 325 326 327 328 329 330 331 332	7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2	-1/2 -1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 5/2 5/2 7/2	6 7 4 5 6 7 5 6 7 6 7 7	3 3 4 4 4 5 5 6 6 7	$ \sqrt{\frac{2}{11}} \sqrt{\frac{5}{143}} \sqrt{\frac{5}{143}} \sqrt{\frac{7}{44}} \sqrt{\frac{21}{52}} \sqrt{\frac{15}{44}} \sqrt{\frac{5}{552}} \sqrt{\frac{7}{26}} \sqrt{\frac{1}{2}} \sqrt{\frac{3}{13}} \sqrt{\frac{1}{2}} \sqrt{\frac{1}{2}} $ 1

Table 27: $[j_1 \otimes j_2 = 7/2 \otimes 3]$

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 $\sqrt{125/924}$

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Table 31: $[j_1 \otimes j_2 = 4 \otimes 3/2]$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_2}{-3/2}$ $\frac{m_1}{-4}$ 11/2-11/2 $\sqrt{8/11}$ 2 -4-1/29/2-9/2 $\sqrt{3/11}$ 3 -4-1/211/2-9/2 $\sqrt{28/45}$ 4 7/2 -7/2-41/2 $\sqrt{32/99}$ 1/29/2-7/2-45 $\sqrt{3/55}$ 6 -41/211/2-7/2 $\sqrt{2/3}$ -5/27 -43/25/2 $\sqrt{4/15}$ -43/27/2-5/2 $\sqrt{2/33}$ 9 3/29/2-5/2 $\sqrt{1/165}$ 10 3/211/2-5/2 $\sqrt{3/11}$ 11 -3-3/29/2 -9/2 $\sqrt{8/11}$ -3-3/211/2-9/212 $-\sqrt{14/45}$ -3-1/27/2-7/213 $\dot{\sqrt{25/99}}$ -1/29/2-7/214 -3 $\sqrt{24/55}$ 15 -3-1/211/2-7/2 $\sqrt{1/4}$ 16 -31/25/2-5/2 $\sqrt[8]{8/45}$ 17 -31/27/2-5/2 $\sqrt{169/396}$ 1/29/2-5/218 -3 $\sqrt{8/55}$ 11/2 -5/219 -31/2 $-\sqrt{5/12}$ 20 -33/25/2-3/2 $\sqrt{2/5}$ 7/2-33/2-3/221 $\sqrt{7/44}$ 9/222 -33/2-3/2 $\sqrt{4/165}$ 3/211/2 23 -3-3/2 $\sqrt{1/15}$ 24 -2-3/27/2-7/2 $\sqrt{14/33}$ 25 -2-3/29/2-7/2 $\sqrt{28/55}$ 26 -2-3/211/2-7/2 $\sqrt{1/14}$ 27 -2-1/25/2 -5/2 $\sqrt{121/315}$ -2-1/27/2 -5/228 $-\sqrt{\frac{7}{198}}$ 9/2 -5/2-1/229 -2 $\sqrt{28/55}$ 30 -2-1/211/2-5/2 $\sqrt{5/14}$ 31 -21/25/2-3/2 $\sqrt{1/105}$ 32 -21/27/2-3/2 $\sqrt{25/66}$ 33 -21/29/2-3/2 $\sqrt{14/55}$ 34 -21/211/2-3/2 $\sqrt{5/21}$ 35 -23/25/2-1/2 $\sqrt{3/7}$ -27/2-1/236 3/2 $-\sqrt{3/11}$ 37 -23/29/2 -1/2 $\sqrt{2/33}$ 11/2 -1/238 -23/2 $\sqrt{1/84}$ 5/2-5/239 -1-3/2 $\sqrt{6/35}$ 40 -1-3/27/2-5/2 $\sqrt{21/44}$ -5/241 -1-3/29/2 $\sqrt{56/165}$ 42 -1-3/211/2-5/2 $\sqrt{5/28}$ 43 -1-1/25/2-3/2 $\sqrt{32/105}$ 44 -1-1/27/2-3/2 $\sqrt{1/132}$ 45 -1-1/29/2 -3/2 $\sqrt{28/55}$ 11/2 -1-1/2-3/246 $\sqrt{5/14}$ -11/25/2-1/247 $\sqrt{\frac{2}{63}}$ -17/2-1/248 1/2 $\sqrt{49/198}$ 49 -11/29/2-1/2 $\sqrt[4]{4/11}$ 50 -11/211/2-1/2 $-\sqrt{\frac{5}{42}}$ 51 -13/25/21/2 $\sqrt{8/21}$ 52 3/27/21/2-1 $\sqrt{\frac{25/66}{25/66}}$ 9/2 1/253-13/2 $\sqrt{4/33}$ 54 -13/211/21/2 $\sqrt[\cdot]{1/21}$ 5/2 -3/20 -3/255 $\sqrt{\frac{2}{7}}$ 7/2-3/20 -3/256 $\sqrt{5/11}$ 57 0 -3/29/2-3/2 $\sqrt[.]{7/33}$ 58 0 -3/211/2-3/2 $-\sqrt{2/7}$ 59 0 -1/25/2-1/260 -1/27/2-1/2 $\sqrt{10/63}$ $\sqrt{10/99}$ -1/29/2 -1/2 $\sqrt{5/11}$ 62 0 -1/211/2-1/2 $\sqrt{2/7}$ 63 0 1/2 5/21/2 $\sqrt{10/63}$ 64 0 1/27/21/2 $\sqrt{10/99}$ 9/265 0 1/21/2 $\sqrt{5/11}$ 66 0 1/211/21/2 $\sqrt{\frac{1/21}{}}$ 67 0 3/25/23/2 $\sqrt{\frac{2}{7}}$ 68 3/27/23/2 $\sqrt{\frac{5}{11}}$ 3/29/23/269 $\sqrt{7/33}$ 11/2 3/2 70 0 3/2 $\sqrt{5/42}$ 71 1 -3/25/2 -1/2 $\sqrt{8/21}$ 7/2 -1/272 1 -3/2 $\sqrt{25/66}$ 9/2-1/273 -3/21 $\sqrt{4/33}$ 74 1 -3/211/2-1/2Table 33: $[j_1 \otimes j_2 = 4 \otimes 5/2]$ $-\sqrt{5/14}$ 75 1 -1/25/21/2 $\sqrt{2/63}$ 76 1 -1/27/21/2 $\frac{m_2}{-5/2}$ $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\sqrt{49/198}$ 77 -1/29/21/2-13/213/2 $\sqrt{4/11}$ $-\sqrt{8/13}$ 78 -1/211/2 1/2 2 -4-3/211/2-11/2 $\sqrt{\frac{5/28}{}}$ $\sqrt{5/13}$ 3 -4-3/213/2-11/279 1 1/25/23/2 $-\sqrt{32/105}$ $\sqrt{14/33}$ 4 -4-1/29/2-9/27/21 1/2 3/2 80 $-\sqrt{64/143}$ $-\sqrt{1/132}$ 9/2 -4-1/211/2-9/25 1/23/281 1 $\sqrt{5/39}$ $\sqrt{28/55}$ -46 -1/213/2-9/211/282 1 1/23/2 $-\sqrt[8]{56/165}$ $\sqrt{\frac{1/84}{}}$ 7 -41/27/2-7/283 1 3/25/25/2 $\sqrt{14/33}$ $\sqrt{6/35}$ -41/29/2-7/28 84 1 3/27/25/2 $-\sqrt{144/715}$ $\sqrt{21/44}$ 85 3/29/25/29 -41/211/2-7/2 $\sqrt{5/143}$ $\sqrt{56/165}$ -4-7/211/2 5/2 10 1/213/286 1 3/2 $\sqrt{5/21}$ $\sqrt{1/3}$ 2 5/21/211 -43/25/2-5/287 -3/2 $\sqrt{3/7}$ $\sqrt{64/165}$ 12 -43/27/2-5/288 2 -3/27/21/2 $\sqrt{3/11}$ $\sqrt[.]{7/33}$ 2 9/21/213 -4 $^{3/2}$ 9/2-5/2-3/289 $\dot{\sqrt{2/33}}$ $\sqrt{128/2145}$ 11/2 -5/214 -43/211/22 -3/21/290 $\sqrt{1/143}$ $\sqrt{5/14}$ 15 -43/213/2-5/291 2 -1/25/23/2 $-\sqrt{\frac{4/9}{2}}$ $\sqrt{1/105}$ 16 -45/23/2-3/292 2 -1/27/23/2 $\sqrt{1/3}$ $\sqrt{25/66}$ 17 -45/25/2-3/293 2 -1/29/23/2 $\sqrt{16/99}$ $\sqrt{14/55}$ 2 -1/211/23/218 -45/27/2-3/2 $\sqrt{5/99}$ $\sqrt{\frac{1/14}{1/14}}$ 95 2 1/25/2 5/219 -45/29/2-3/2 $-\sqrt{\frac{121/315}{-}}$ $\sqrt{4/429}$ 20 -45/211/2-3/296 1/27/2 5/2 $\sqrt{7/198}$ $\sqrt{1/1287}$ 21 5/213/29/297 $\sqrt{5/13}$ $\sqrt{28/55}$ 22 -3-5/211/2 -11/298 2 1/211/25/2 $\sqrt{8/13}$ $\sqrt{1/15}$ 23 -3-5/213/2-11/22 7/299 3/27/2 $-\sqrt{\frac{14/33}{14/33}}$ $\sqrt{14/33}$ 24 -3-3/29/2 -9/2100 2 3/29/27/2 $-\sqrt{9/143}$ $\sqrt{28/55}$ -3/211/225 -3-9/2101 2 3/211/27/2 $\sqrt{20/39}$ $\sqrt{5/12}$ 102 3 -3/25/23/226 -3-3/213/2-9/2 $\sqrt{21/55}$ $\sqrt{2/5}$ 7/227 -3-1/27/2-7/2103 3 -3/23/2 $\sqrt{22/65}$ $\sqrt{7/44}$ 3 9/2 28 -3-1/211/2-7/2104 -3/23/2 $\sqrt{4/165}$ $\sqrt{40/143}$ 29 -3-1/213/2-7/2105 3 -3/211/23/2 $-\sqrt{1/4}$ $-\sqrt{1/3}$ 5/2 30 -31/25/2-5/23 -1/25/2 106 $\sqrt{1/165}$ $/_{8/45}$ 7/2 31 -31/27/2-5/2107 3 -1/25/2 $\sqrt{\frac{7/33}{}}$ $\sqrt{169/396}$ 32 -31/29/2 -5/2-1/25/2108 3 9/2 $\sqrt{8/55}$ $\sqrt{722/2145}$ 33 -31/211/2-5/2109 3 -1/211/25/2 $\sqrt{16/143}$ $\sqrt{14/45}$ 34 -31/213/2-5/21103 1/27/27/2 $\sqrt{5/18}$ $\sqrt{25/99}$ -3/2111 3 1/29/27/235 -33/23/2 $\sqrt{98/495}$ $\sqrt{24/55}$ 1/2 11/2 7/236 -33/27/2-3/2 $-\sqrt{\frac{3}{11}}$ $\sqrt{32/99}$ 37 -33/29/2-3/23 3/29/29/2 113 $\sqrt{8/11}$ $\sqrt{243/1430}$ 38 -33/211/2-3/23 3/211/29/2114 $\sqrt{40/1287}$ $\sqrt{2/3}$ 39 -33/2-3/213/24 -3/25/25/2115 $-\sqrt{1/6}$ $\sqrt{4/15}$ -340 5/23/2-1/27/2116 4 -3/25/2 $\sqrt{1/3}$ $\sqrt[6]{2/33}$ 41 -35/25/2 -1/21174 -3/29/25/2 $-\sqrt{10/33}$ $\sqrt{1/165}$ 42 -35/27/2-1/2118 4 -3/211/25/2 $\sqrt{5/33}$ $\sqrt{28/45}$ 119 4 -1/27/27/243 -35/29/2-1/2 $\sqrt{32/99}$ $-\sqrt{35/858}$ -1/29/2 7/244 -35/211/2-1/2120 $\sqrt[.]{2/429}$ $\sqrt{\frac{3/55}{.}}$ 45-35/213/2-1/2121 4 -1/211/27/2 $\sqrt{\frac{8}{11}}$ $\sqrt{5/33}$ 46 -2-5/29/2-9/2122 4 1/29/29/2 $\sqrt{3/11}$ $\sqrt{70/143}$ 4 1/211/2 9/2 47 -2-5/211/2-9/2123 $\sqrt{\frac{14/39}{-}}$ 3/2124 11/211/2-248 -5/213/2-9/2 $-\sqrt{\frac{12}{55}}$ 49 -2-3/27/2-7/2 $-\sqrt{\frac{3}{11}}$ 50 -2-3/29/2-7/2 $\sqrt{14/715}$ 51 -2-3/211/2-7/2 $\sqrt{70/143}$ 52 -2-3/213/2-7/2 $\sqrt{3/14}$ 53-2-1/25/2-5/2 $\sqrt{54/385}$ 54-2-1/27/2-5/2 $-\sqrt{3/22}$ -2-1/29/2-5/2 $\sqrt{84/715}$ -2-1/211/2-5/2 $\sqrt{56/143}$ -257 -1/213/2-5/2 $-\sqrt{10/63}$ -21/258 3/2-3/2 $-\sqrt{5/42}$ -21/259 5/2-3/2 $\sqrt{578/3465}$ 60 -21/27/2-3/2 $\sqrt{25/1386}$ -21/261 9/2-3/2 $\sqrt{686/2145}$ 62-21/211/2-3/2 $\sqrt{280/1287}$ 63 -21/213/2-3/2 $\sqrt{\frac{5/21}{-}}$ 64 -23/23/2-1/2 $-\sqrt{\frac{5/42}{}}$ -2-1/2653/25/2 $-\sqrt{\frac{4/231}{2}}$ 66 -23/27/2-1/2 $\sqrt{11/42}$ 67 -23/29/2-1/2 $\sqrt{11/39}$ 68 -23/211/2-1/2 $\sqrt{35/429}$ -213/2 -1/269 3/2 $-\sqrt{1/21}$ 70 -25/23/21/2 $\sqrt{3/14}$ 71-25/25/21/2 $\sqrt{80/231}$ 72 -25/2 7/21/2 $\sqrt{125/462}$ -21/2 73 5/29/2 $-\sqrt{\frac{15/143}{}}$ -21/2 745/211/2 $\sqrt{7/429}$ 75 -213/2 1/25/2 $\sqrt{\frac{2}{33}}$ 76 -17/2-7/2-5/2 $\sqrt{10/33}$ -177 -5/29/2-7/2 $\sqrt{63/143}$ -1-7/278 -5/211/2 $\sqrt{28/143}$ 79-1-5/213/2-7/2 $-\sqrt{\frac{2/21}{2}}$ 80 -1-3/25/2-5/2 $\sqrt{338/1155}$ 81 -1-3/27/2-5/2 $-\sqrt{\frac{2}{33}}$ -182 -3/29/2-5/2 $\sqrt{\frac{343/2145}{343/2145}}$ -1-3/211/2-5/283 $\sqrt{56/143}$ 84 -1-3/213/2-5/2 $\sqrt{5/63}$ 3/2-1-1/2-3/285 $\sqrt{5/21}$ 86 -1-1/25/2-3/2 $\sqrt{1/3465}$ 87 -1-1/27/2-3/2 $\sqrt{\frac{169/693}{169/693}}$ 88 -1-1/29/2-3/2 $\sqrt{\frac{7}{2145}}$ 89 -1-1/211/2-3/2 $\sqrt{560/1287}$ -190 -1/213/2-3/2 $-\sqrt{\frac{5/21}{}}$ -11/23/2-1/2 $\sqrt{7/33}$ 92 -11/2 7/2-1/2 $-\sqrt{8/231}$ -193 1/2 9/2-1/2 $\sqrt{27/143}$ 11/2 $\sqrt{140/429}$ 95 -11/213/2-1/2 $\sqrt{5/42}$ 96 -13/23/21/2 $-\sqrt{5/21}$ 97 -13/25/21/2 $\sqrt{8/231}$ 98 -13/27/21/2 $\sqrt{25/231}$ 99 -13/29/21/2 $-\sqrt{\frac{289}{858}}$ 100 -13/211/2 1/2 $\sqrt{70/429}$ 101 -13/213/21/2 $-\sqrt{1/126}$ 3/2 102 -15/23/2 $\sqrt{2/21}$ 103 -15/25/23/2 $\sqrt{200/693}$ 104 -15/27/23/2 $\sqrt{250/693}$ 105 -15/29/23/2 $-\sqrt{175/858}$ 106 -15/2 11/23/2 $\sqrt{56/1287}$ -1107 5/213/23/2 $\sqrt{1/42}$ 108 0 -5/25/2-5/2 $\sqrt{40/231}$ 0 7/2109 -5/2-5/2 $\sqrt{25/66}$ 0 9/2110 -5/2-5/2 $\sqrt{140/429}$ 111 0 -5/211/2-5/2 $\sqrt{14/143}$ 112 0 -5/213/2-5/2 $-\sqrt{\frac{2/63}{-}}$ 113 0 -3/23/2-3/2 $-\frac{1}{\sqrt{3/14}}$ 114 0 -3/25/2-3/2 $\sqrt{128/693}$ 115 0 -3/27/2-3/2 $\sqrt{5/1386}$ 0 116 -3/29/2-3/2 $\sqrt{\frac{42/143}{}}$ 0 11/2-3/2117-3/2 $\sqrt{350/1287}$ -3/20 118 -3/213/2 $\sqrt{4/21}$ -1/23/20 -1/2119 $\sqrt{2/21}$ 120 0 -1/25/2-1/2 $-\sqrt{20/231}$ 121 0 -1/27/2-1/2 $-\sqrt{40/231}$ 122 0 -1/29/2-1/2 $\sqrt{20/429}$ 123 0 -1/211/2-1/2 $\sqrt{175/429}$ 124 0 -1/213/2-1/2 $-\sqrt{\frac{4/21}{2}}$ 125 0 1/23/21/2 $\sqrt{2/21}$ 0 1/2126 5/21/2 $\sqrt{20/231}$ 0 1/27/2127 1/2 $-\sqrt{40/231}$ 128 0 1/29/21/2 $-\sqrt{20/429}$ 129 0 1/211/21/2 $\sqrt{175/429}$ 130 0 1/213/21/2 $\sqrt{\frac{2}{63}}$ 131 0 3/23/23/2 $-\sqrt{3/14}$ 132 0 3/25/23/2 $\sqrt{128/693}$ 0 133 3/27/23/2 $\sqrt{\frac{5/1386}{}}$ 0 3/29/2 134 3/2 $-\sqrt{\frac{42/143}{}}$ 0 135 3/211/23/2 $\sqrt{350/1287}$ 0 3/213/23/2136 $\sqrt{1/42}$ 137 0 5/25/25/2 $-\sqrt{40/231}$ 138 0 5/27/25/2 $\sqrt{25/66}$ 139 0 5/29/25/2 $\sqrt{140/429}$ 140 0 5/2 11/25/2 $\sqrt{14/143}$ 0 141 5/213/25/2Table 32: $[j_1 \otimes j_2 = 4 \otimes 2]$ $\sqrt{\frac{1/126}{.}}$ 142 1 -5/23/2-3/2 $\sqrt{2/21}$ 1 5/2143 -5/2-3/2 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$ $\frac{m_1}{-4}$ $\frac{m_2}{-2}$ $\sqrt{200/693}$ 1 7/26 144 -5/2-3/2 $-\sqrt{\frac{2}{3}}$ $\sqrt{250/693}$ -1-5145 1 -5/29/2-3/2 $\sqrt{1/3}$ $\sqrt{175/858}$ 3 -4-5-16 146 1 -5/211/2-3/2 $\sqrt{28/55}$ $\sqrt{56/1287}$ -44 -40 1471 -5/213/2-3/2 $-\sqrt{\frac{2}{5}}$ $-\sqrt{\frac{5/42}{2}}$ -40 -45 148 1 -3/23/2-1/2 $-\sqrt{\frac{5}{21}}$ $\sqrt{1/11}$ -46 0 -4149 1 -3/25/2-1/2 $-\sqrt{\frac{7}{15}}$ $-\sqrt{8/231}$ 7 -41 -31 150 -3/27/2-1/2 $\sqrt{25/231}$ 8 -41 -3 $\sqrt{21/55}$ 1 9/2-1/2151-3/2 $-\sqrt{\frac{2/15}{2}}$ $\sqrt{\frac{289/858}{1}}$ 9 1 -4-3152 1 -3/211/2-1/2 $\sqrt{70/429}$ $\sqrt{1/55}$ 10 -41 6 -31 13/2-1/2153 -3/2 $\sqrt{5/21}$ 112 -2 $\sqrt{5/9}$ 154 1 -1/23/21/2 $-\sqrt{14/45}$ $-\sqrt{7/33}$ 12 2 -2-43 155 1 -1/27/21/2 $\sqrt{6/55}$ 2 -4-213 4 156 1 -1/29/21/2 $\sqrt{8/231}$ $-\sqrt{1/45}$ $\sqrt{27/143}$ -42 14 -2157 1 -1/211/21/2 $\sqrt{1/495}$ $\sqrt{140/429}$ 15 -42 6 -21 158 -1/213/21/2 $\sqrt{1/3}$ $-\sqrt{\frac{5/63}{}}$ 16 -3-2-5159 1 1/23/23/2 $\sqrt{2/3}$ $\sqrt{\frac{5/21}{}}$ 17 -3-2-51 1/2160 5/23/2 $\sqrt{\frac{21/55}{1}}$ $-\sqrt{1/3465}$ -318 7/2161 1 1/23/2 $-\sqrt{\frac{2/15}{2}}$ $\sqrt{169/693}$ 19 -3-1162 1 1/29/23/2 $\sqrt{16/33}$ $\sqrt{7/2145}$ 20 -3-1-4163 1 1/211/23/2 $\sqrt{\frac{7/20}{1}}$ 21 $\sqrt{560/1287}$ -30 -3164 1 1/213/23/2 $\sqrt{7/220}$ $-\sqrt{\frac{2}{21}}$ -30 -322 4 165 1 3/25/25/2 $-\sqrt{\frac{2}{5}}$ $\sqrt{338/1155}$ 23 0 -35 -3166 3/2 7/2 $\sqrt{2/33}$ $\sqrt{12/55}$ 3/29/25/2 $-\sqrt{\frac{5/18}{5}}$ $-\sqrt{343/2145}$ 25 -31 2 -21 3/2 11/2 5/2168 $\sqrt{56/143}$ $\sqrt{7/180}$ 26 -33 -2169 1 3/213/25/2 $-\sqrt{\frac{2}{33}}$ $\sqrt{15/44}$ 27 -2-34 5/2 7/27/2170 1 $-\sqrt{5/18}$ $\sqrt{10/33}$ 28 -31 -25 171 1 5/29/27/2 $\sqrt{32/495}$ $\sqrt{63/143}$ 29 -31 -26 1721 5/211/27/2 $\sqrt{5/18}$ $\sqrt{28/143}$ 2 30 -32 -1173 1 5/213/27/2 $\sqrt{7/18}$ 31 -32 3 -1174 2 -1/2-5/2 $\sqrt{27/110}$ $\sqrt{3/14}$ 2 32 -34 -12 175 -5/25/2-1/2 $\sqrt{7/90}$ $\sqrt{80/231}$ 33 -32 5 -1176 2 -5/27/2-1/2 $\sqrt{1/99}$ $\sqrt{\frac{125/462}{1}}$ 34 -32 -12 9/2-1/2177 -5/2 $\sqrt{\frac{6/55}{1}}$ $\sqrt{15/143}$ 35 -2-22 -5/211/2-1/2178 $\sqrt{\frac{7/15}{1}}$ $\sqrt{7/429}$ -2-236 -1/2179 2 -5/213/2 $-\sqrt{\frac{5}{21}}$ $\sqrt{14/33}$ -2-2-437 2 180 -3/23/21/2 $-\sqrt{\frac{5/42}{5/42}}$ $-\sqrt{3/20}$ -2-338 -13 181 2 -3/25/21/2 $\sqrt{15/44}$ $\sqrt{4/231}$ -2-1-339 4 182 2 -3/27/21/2 $\sqrt{28/55}$ $\sqrt{\frac{11/42}{.}}$ 40 -2-16 -3183 2 -3/29/21/2 $\sqrt{\frac{5/42}{-}}$ $\sqrt{\frac{11/39}{11/39}}$ 41-20 2 -22 1/2 184 -3/211/2 $\sqrt{\frac{4/15}{-}}$ $\sqrt{35/429}$ 42 -20 3 -22 -3/213/2 1/2185 $\sqrt{\frac{16/385}{16}}$ $\sqrt{10/63}$ 43 -20 -24 2 186 -1/23/23/2 $\sqrt{7/30}$ $\sqrt{5/42}$ -20 44 5 -22 5/2 -1/23/2187 $\sqrt{56/165}$ 45 -20 6 -2 $\sqrt{578/3465}$ 2 188 -1/27/23/2 $-\sqrt{20/63}$ $\sqrt{\frac{25/1386}{}}$ 1 2 -246 -1189 2 -1/29/23/2 $\sqrt{1/36}$ $\sqrt{686/2145}$ 47 -21 3 -1190 2 -1/211/23/2 $\sqrt{243/1540}$ $\sqrt{280/1287}$ -21 48 4 -1191 2 -1/213/23/2 $\sqrt{16/45}$ $\sqrt{\frac{3/14}{}}$ 49 -21 5 -12 192 1/25/25/2 $-\sqrt[4]{\frac{54/385}{54/385}}$ $\sqrt{14/99}$ 50 -21 6 -1193 2 1/27/25/2 $\sqrt{5/42}$ $-\sqrt{3/22}$ 51 -22 2 0 2 1/29/2194 5/2 $-\sqrt{1/3}$ 52 -22 $\sqrt{84/715}$ 2 1/211/25/2195 $\sqrt{27/77}$ $\sqrt{\frac{56/143}{56/143}}$ -22 53 0 196 2 1/213/25/2 $-\sqrt{1/6}$ $\sqrt{12/55}$ -22 0 54 2 197 3/27/27/2 $\sqrt{\frac{1/33}{1/33}}$ $-\sqrt{3/11}$ -22 0 55 198 2 3/29/27/2 $\sqrt{1/30}$ $\sqrt{14/715}$ -156 -23 -3199 2 3/211/27/2 $\sqrt{27/110}$ $\sqrt{70/143}$ -157 -24 -3200 2 3/213/27/2 $\sqrt{\frac{7/15}{1}}$ $\sqrt{5/33}$ 58 -1-25 -32 201 5/29/29/2 $-\sqrt{\frac{70/143}{1}}$ $\sqrt{14/55}$ 59 -1-26 -32 5/211/2 9/2 202 $-\sqrt{5/126}$ $\sqrt{14/39}$ 60 -1-22 203 5/2 13/29/2 $\sqrt{1/6}$ $/_{49/180}$ 61 -1-13 3 3/2 204 -5/21/2 $-\sqrt{\frac{243/1540}{243/1540}}$ $\sqrt{1/3}$ 62 -1-1-24 3 205 -5/25/21/2 $\sqrt{7/90}$ $\sqrt{10/33}$ 63 -15 -2-1206 3 -5/27/21/2 $\sqrt{224/495}$ $\sqrt{5/33}$ 64 -16 -2-1207 3 -5/29/21/2 $\sqrt{5/21}$ $\sqrt{\frac{35/858}{35/858}}$ 65 -10 2 -1208 3 -5/211/21/2 $\sqrt{1/12}$ $\sqrt{2/429}$ 66 -10 3 -13 209 -5/213/21/2 $-\sqrt{5/18}$ $\sqrt{289/1540}$ 67 -10 4 -1210 3 -3/23/2 3/2 $-\sqrt{1/15}$ $\sqrt{98/495}$ 68 -10 -13 7/23/2211 -3/2 $\sqrt{14/33}$ 69 0 $\sqrt{32/99}$ 3 -3/29/23/2212 $-\sqrt{5/21}$ -170 0 $\sqrt{243/1430}$ 213 3 -3/211/23/2 $\sqrt[4]{1/6}$ $\sqrt{40/1287}$ 71-11 0 3 2143 -3/213/23/2 $-\sqrt{\frac{1}{3}}$ $\sqrt{3/154}$ -11 0 72 2153 -1/25/25/2 $-\sqrt{1/3}$ $\sqrt{1/165}$ -11 0 73 216 3 -1/27/25/2 $\frac{\dot{\sqrt{7/33}}}{}$ -1 $\sqrt{8/33}$ 741 6 0 217 3 -1/29/25/2 $\sqrt{5/126}$ $\sqrt{722/2145}$ 75-12 1 3 5/2218 -1/211/2 $-\sqrt{\frac{2}{9}}$ $\sqrt{16/143}$ 76 -12 1 3 -1/213/25/2219 $-\sqrt{21/55}$ $\sqrt{30/77}$ 77 2 3 220 1/27/27/2 $\sqrt{\frac{5/18}{}}$ $\sqrt{\frac{22/65}{}}$ 2 78 -1221 3 1/211/27/2 $\sqrt{\frac{7/99}{-}}$ $\sqrt{40/143}$ 79 2 1 -16 222 3 1/213/27/2 $\sqrt{1/126}$ $\sqrt{\frac{14/33}{14/33}}$ 0 2 80 -2-2223 3 3/29/29/2 $\sqrt{1/9}$ $\sqrt{\frac{9/143}{-}}$ 81 0 -23 -2224 3 3/211/29/2 $\sqrt{27/77}$ $\sqrt{20/39}$ 0 82 -24 -2225 3 3/213/29/2 $\sqrt{7/18}$ $-\sqrt{\frac{5}{13}}$ 0 83 -25 -2226 3 5/211/211/2 $\sqrt{14/99}$ $\sqrt{8/13}$ 84 0 -26 -2227 3 5/213/2 11/2 $-\sqrt{\frac{8/63}{5}}$ $\sqrt{4/9}$ 85 0 -12 -14 3/23/2228 -5/2 $-\sqrt{\frac{5/18}{5/18}}$ 86 0 $\sqrt{1/3}$ 4 -5/25/23/2229 $-\sqrt{\frac{3}{154}}$ $\sqrt{16/99}$ 87 230 4 -5/27/23/2 $\sqrt{\frac{2/9}{2}}$ $\sqrt{5/99}$ 0 88 -1-1231 4 -5/29/23/2 $\sqrt{35/99}$ 0 -1 $\sqrt{4/429}$ 89 -16 232 4 -5/211/23/2 $\sqrt{1/1287}$ $\sqrt{2/7}$ 0 0 2 0 90 233 4 -5/213/23/2 $\sqrt{20/77}$ $\sqrt{1/3}$ 91 0 0 4 0 234 4 -3/25/25/2 $\sqrt{5/11}$ $\sqrt{64/165}$ 92 0 0 6 0 4 235 -3/27/25/2 $\sqrt{\frac{8/63}{}}$ $\sqrt{7/33}$ 93 0 1 2 4 -3/29/2 5/2 236 $\sqrt{5/18}$ $\sqrt{128/2145}$ 0 237 4 -3/211/25/2 $-\sqrt[8]{3/154}$ $\sqrt{1/143}$ 95 238 4 -3/213/25/2 $-\sqrt{\frac{2}{9}}$ $\sqrt{56/165}$ 96 239 4 7/2-1/27/2 $\sqrt{35/99}$ $\sqrt{14/33}$ 97 0 6 240 4 -1/29/27/2 $\sqrt{1/126}$ $\sqrt{\frac{144/715}{-}}$ 0 2 2 2 98 241 4 -1/211/27/2 $\sqrt{\frac{5/143}{5}}$ $\sqrt{1/9}$ 0 2 2 99 3 242 4 -1/213/27/2 $\sqrt{\frac{14/33}{14/33}}$ $\sqrt{27/77}$ 2 2 100 0 4 243 1/29/29/2 $\sqrt{7/18}$ $\sqrt{\frac{64/143}{64/143}}$ 101 0 2 5 2 2444 1/211/29/2 $\sqrt{14/99}$ 1020 2 2 $\sqrt{5/39}$ 4 1/2245 13/29/2 $\sqrt[8]{5/126}$ $\sqrt[6]{8/13}$ 103 -24 3/211/211/2246 $\sqrt{\frac{2/9}{2/9}}$ $\sqrt[8]{5/13}$ -2104 13/2 247 4 3/211/2 $\sqrt{30/77}$ 248 13/213/21 -2-1105 4 $\sqrt{\frac{5/18}{1}}$ 1 -2-1106 $\sqrt[4]{7/99}$ 1 -1107 -26 $-\sqrt{\frac{5/21}{5}}$ 0 108 1 -12 $-\sqrt{\frac{1}{6}}$ 109 1 -13 0 $\sqrt{3/154}$ 1101 -14 0 $\sqrt{\frac{1}{3}}$ 1111 0 -1 $\sqrt{\frac{8/33}{}}$ 1121 -16 0 $\sqrt[8]{5/21}$ 113 1 0 2 1 $-\sqrt{1/12}$ 0 114 1 1 3 $\sqrt{289/1540}$ 115 1 0 4 1 $\sqrt{1/15}$ 116 1 0 5 1 $\sqrt{14/33}$ 117 1 0 6 1 $\sqrt{5/126}$ 1181 1 2 2 $\sqrt{49/180}$ 1191 1 3 2 $\sqrt{243/1540}$ 120 2 $-\sqrt{7/90}$ 121 $\sqrt{224/495}$ 1 2 122 1 $-\sqrt{1/30}$ 2 123 1 3 3 $\sqrt{27/110}$ 2 3 1241 4 $-\sqrt{7/15}$ 125 1 2 5 3 $\sqrt{14/55}$ 1261 2 6 3 $\sqrt{5/42}$ 1272 -22 0 $\sqrt{\frac{1/3}{}}$ 128 2 -23 0 $\sqrt{27/77}$ 2 -2129 4 0 $\sqrt{\frac{1/6}{1/6}}$ 130 2 -20 5 $\sqrt{1/33}$ 2 131 -26 0 $-\sqrt[6]{20/63}$ 2 132 -12 1 $\sqrt{\frac{1}{36}}$ 2 133 -13 1 $\sqrt{243/1540}$ 134 2 -14 1 $\sqrt{16/45}$ 135 2 -15 1 $\sqrt{14/99}$ 136 2 -11 $\sqrt[8]{5/42}$ 137 2 0 2 $-\sqrt{4/15}$ 2 2 138 0 $\sqrt{\frac{16/385}{1}}$ 2 0 2 139 4 $\sqrt{\frac{7}{30}}$ 0 2 140 $\sqrt{56/165}$ 141 2 0 2 6 $\sqrt{3/20}$ 142 2 1 3 3 $\sqrt[8]{15/44}$ 1432 1 4 3 $\sqrt{28/55}$ 1442 1 6 3 $\sqrt{\frac{6/55}{-}}$ 145 2 2 4 $-\sqrt{\frac{7/15}{1}}$ 2 2 1465 4 $\sqrt{14/33}$ 1472 2 6 4 $\sqrt{5/18}$ 3 2 1 148 -2 $\sqrt[4]{7/18}$ 149 3 -23 1 $\sqrt{27/110}$ 150 3 -24 1 $\sqrt{\frac{7/90}{5}}$ 1513 -25 1 $\sqrt[\mathbf{v}]{1/99}$ 1523 -21 $-\sqrt{5/18}$ 1533 -12 2 $\sqrt{7/180}$ 3 2 154 $\sqrt[8]{15/44}$ 155 3 $\sqrt{5/18}$ 3 2 156 -1 $\sqrt{32/495}$ 3 -12 157 $-\sqrt{7/20}$ 3 0 3 158 3 $\sqrt{7/220}$ 159 3 0 4 3 $\sqrt{\frac{2/5}{2}}$ 1603 0 5 3 $\sqrt{12/55}$ 161 3 0 6 3 $-\sqrt[8]{\frac{21}{55}}$ 162 3 4 4 $\sqrt[8]{\frac{2}{15}}$ 3 163 5 4 $\sqrt{16/33}$ 164 3 1 6 4 $-\sqrt{1/3}$ 3 2 5 5 165 $\sqrt{2/3}$ 2 166 3 6 5 $\sqrt[8]{5/9}$ 2 2 167 4 -2 $\sqrt{14/45}$ 168 4 -23 2 $\sqrt{6/55}$ 169 -24 $\sqrt{1/45}$ 170 5 2 $\sqrt{1/495}$ 171 -2 $\sqrt{7/15}$ 3 $\sqrt{21/55}$ 173 -13 $\sqrt{2/15}$ 3 174 -1 $\sqrt{1/55}$ 3 175 4 -16 $\sqrt{28/55}$ 176 4 0 4 4 $\sqrt{\frac{2}{5}}$ 1774 0 4 $\sqrt[1]{1/11}$ 1784 0 4 $\sqrt{\frac{2/3}{2}}$ 179 1 5 $\sqrt{1/3}$ 180 1 5 181

9 10 11 12 13 14 15 16 17 18 19 20 21	-4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -	-1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2	13/2 15/2 7/2 9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 13/2	$ \begin{array}{r} -9/2 \\ -9/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -5/2 \\ -$	$ \begin{array}{c} -\sqrt{4/13} \\ \sqrt{1/13} \\ \sqrt{14/99} \\ -\sqrt{448/1287} \\ \sqrt{48/143} \\ -\sqrt{64/429} \\ \sqrt{1/39} \\ -\sqrt{4/33} \\ \sqrt{10/33} \\ -\sqrt{140/429} \\ \sqrt{80/429} \\ -\sqrt{8/143} \\ \sqrt{1/143} \end{array} $
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	-4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -	3/2 5/2 5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 7/2 7/2 -7/2 -5/2 -5/2 -3/2 -3/2 -1/2 -1/2	15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 15/	-5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1	$ \sqrt{\frac{2}{15}} $ $ -\sqrt{\frac{16}{55}} $ $ \sqrt{\frac{10}{33}} $ $ -\sqrt{\frac{80}{429}} $ $ \sqrt{\frac{10}{143}} $ $ -\sqrt{\frac{32}{2145}} $ $ \sqrt{\frac{1}{715}} $ $ -\sqrt{\frac{2}{9}} $ $ \sqrt{\frac{14}{45}} $ $ -\sqrt{\frac{14}{55}} $ $ \sqrt{\frac{14}{99}} $ $ -\sqrt{\frac{70}{1287}} $ $ \sqrt{\frac{2}{143}} $ $ -\sqrt{\frac{14}{6435}} $ $ \sqrt{\frac{7}{15}} $ $ \sqrt{\frac{8}{15}} $ $ -\sqrt{\frac{6}{13}} $ $ -\sqrt{\frac{1}{195}} $ $ \sqrt{\frac{8}{15}} $ $ \sqrt{\frac{105}{286}} $ $ -\sqrt{\frac{8}{143}} $ $ -\sqrt{\frac{27}{130}} $ $ \sqrt{\frac{24}{65}} $ $ -\sqrt{\frac{28}{99}} $ $ \sqrt{\frac{343}{2574}} $
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73	-3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -	-1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2	11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 3/2 5/2 9/2 11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 1/2 5/2 5/2 5/2 5/2 5/2	$\begin{array}{c} -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -3/2 \\ -3/2 \\ -3/2 \\ -3/2 \\ -3/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ -1/2 \\ 1/2 \\ 1/2 \\ 1/2 \end{array}$	
74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98	-3 -3 -3 -3 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	7/2 7/2 7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -	7/2 9/2 11/2 13/2 15/2 11/2 13/2 15/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 15/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 5/2 5/2 5/2	$ \begin{array}{c} 1/2 \\ 1/2 \\ 1/2 \\ 1/2 \\ 1/2 \\ -11/2 \\ -11/2 \\ -11/2 \\ -9/2 \\ -9/2 \\ -9/2 \\ -9/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -7/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -5/2 \\ -3/2 \\ -3/2 \end{array} $	$\begin{array}{c} \sqrt{28/99} \\ -\sqrt{875/5148} \\ \sqrt{9/143} \\ -\sqrt{183/13733} \\ \sqrt{8/6435} \\ \sqrt{3/13} \\ \sqrt{98/195} \\ \sqrt{4/15} \\ -\sqrt{45/143} \\ -\sqrt{21/143} \\ \sqrt{7/65} \\ \sqrt{28/65} \\ \sqrt{10/33} \\ \sqrt{5/429} \\ -\sqrt{35/143} \\ -\sqrt{7/715} \\ \sqrt{28/65} \\ -\sqrt{20/77} \\ \sqrt{2/693} \\ \sqrt{256/1287} \\ -\sqrt{7/143} \\ -\sqrt{70/429} \\ \sqrt{140/429} \\ \sqrt{3/14} \\ -\sqrt{1/77} \\ \end{array}$
99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123	-2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -	1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2	7/2 9/2 11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 15/2 15/2 7/2 9/2 15/2 3/2 5/2 7/2 9/2	-3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2	$-\sqrt{32/231}$ $\sqrt{361/3003}$ $\sqrt{7/286}$ $-\sqrt{42/143}$ $\sqrt{28/143}$ $-\sqrt{1/6}$ $\sqrt{1/210}$ $\sqrt{289/2310}$ $-\sqrt{32/231}$ $-\sqrt{5/6006}$ $\sqrt{13/66}$ $-\sqrt{91/330}$ $\sqrt{196/2145}$ $\sqrt{1/18}$ $-\sqrt{121/630}$ $\sqrt{81/770}$ $\sqrt{2/693}$ $-\sqrt{1618/9329}$ $\sqrt{81/286}$ $-\sqrt{152/967}$ $\sqrt{196/6435}$ $\sqrt{1/30}$ $-\sqrt{9/55}$ $\sqrt{10/33}$ $-\sqrt{125/429}$
124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148	-2 -2 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2 -5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2	11/2 13/2 15/2 9/2 11/2 13/2 15/2 7/2 9/2 13/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 15/2 15/2 11/2 15/2 11/2 11/2 11/2 11/2 11/2 11/2 11/2	3/2 3/2 3/2 3/2 -9/2 -9/2 -9/2 -9/2 -7/2 -7/2 -7/2 -5/2 -5/2 -5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2	$ \sqrt{45/286} \\ -\sqrt{98/2145} \\ \sqrt{4/715} \\ \sqrt{35/286} \\ \sqrt{54/143} \\ \sqrt{49/130} \\ \sqrt{8/65} \\ -\sqrt{20/99} \\ -\sqrt{55/234} \\ \sqrt{91/330} \\ \sqrt{56/195} \\ \sqrt{50/231} \\ \sqrt{20/231} \\ -\sqrt{40/429} \\ -\sqrt{70/429} \\ \sqrt{7/143} \\ \sqrt{56/143} \\ -\sqrt{4/21} \\ -\sqrt{2/77} \\ \sqrt{12/77} \\ \sqrt{12/77} \\ \sqrt{24/1001} \\ -\sqrt{28/143} \\ -\sqrt{7/429} \\ \sqrt{56/143} \\ -\sqrt{7/429} \\ \sqrt{56/143} \\ \sqrt{5/36} \\ $
149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173	-1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -	1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2	3/2 5/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 15/2 3/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 15/2 15/2 15/2 11/2	-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2	$ \sqrt{1/63} - \sqrt{7/44} \sqrt{729/4004} - \sqrt{5/143} - \sqrt{77/468} \sqrt{392/1287} - \sqrt{1/12} \sqrt{16/105} - \sqrt{1/4620} - \sqrt{12/77} \sqrt{375/4004} \sqrt{16/429} - \sqrt{1285/4363} \sqrt{392/2145} - \sqrt{3/35} \sqrt{169/770} - \sqrt{20/231} - \sqrt{125/6006} \sqrt{35/143} - \sqrt{189/715} \sqrt{56/715} - \sqrt{1/22} \sqrt{20/99} - \sqrt{875/2574} \sqrt{40/143} $
174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198	-1 -1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2 -7/2	13/2 15/2 7/2 9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 15/2	5/2 5/2 5/2 -7/2 -7/2 -7/2 -7/2 -7/2 -5/2 -5/2 -5/2 -5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2	$ \begin{array}{c} $
199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223		-1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 13/2 5/2 7/2 9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 7/2	-1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 7/2	$\begin{array}{c} \sqrt{25/143} \\ -\sqrt{25/143} \\ \sqrt{35/1287} \\ \sqrt{490/1287} \\ \sqrt{1/9} \\ -\sqrt{5/63} \\ -\sqrt{5/77} \\ \sqrt{9/77} \\ \sqrt{45/1001} \\ -\sqrt{25/143} \\ -\sqrt{35/1287} \\ \sqrt{490/1287} \\ \sqrt{1/7} \\ -\sqrt{32/231} \\ -\sqrt{1/77} \\ \sqrt{200/1001} \\ -\sqrt{7/429} \\ -\sqrt{28/143} \\ \sqrt{42/143} \\ \sqrt{10/77} \\ -\sqrt{169/693} \\ \sqrt{50/1287} \\ \sqrt{14/143} \\ -\sqrt{140/429} \\ \sqrt{70/429} \\ \sqrt{79/99} \\ \end{array}$
224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247	0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7/2 7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2	9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 13/2 15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2	7/2 7/2 7/2 7/2 7/2 -5/2 -5/2 -5/2 -5/2 -5/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1	$-\sqrt{350/1287}$ $\sqrt{54/143}$ $-\sqrt{98/429}$ $\sqrt{2/39}$ $\sqrt{1/22}$ $\sqrt{20/99}$ $\sqrt{875/2574}$ $\sqrt{40/143}$ $\sqrt{49/429}$ $\sqrt{8/429}$ $-\sqrt{3/35}$ $-\sqrt{169/770}$ $-\sqrt{20/231}$ $\sqrt{125/6006}$ $\sqrt{35/143}$ $\sqrt{189/715}$ $\sqrt{56/715}$ $\sqrt{1/12}$ $\sqrt{16/105}$ $\sqrt{1/4620}$ $-\sqrt{12/77}$ $-\sqrt{375/4004}$ $\sqrt{16/429}$ $\sqrt{1285/4363}$ $\sqrt{392/2145}$
249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273		-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2	1/2 3/2 5/2 9/2 11/2 13/2 15/2 3/2 5/2 7/2 9/2 11/2 15/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 15/2 7/2 9/2 15/2 9/2 15/2 9/2 15/2 9/2	1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	$\begin{array}{c} \sqrt{}\\ -\sqrt{5/36}\\ \sqrt{1/63}\\ \sqrt{7/44}\\ -\sqrt{729/4004}\\ -\sqrt{5/143}\\ \sqrt{77/468}\\ \sqrt{392/1287}\\ -\sqrt{4/21}\\ \sqrt{2/77}\\ \sqrt{12/77}\\ -\sqrt{24/1001}\\ -\sqrt{28/143}\\ \sqrt{7/429}\\ \sqrt{56/143}\\ -\sqrt{50/231}\\ \sqrt{40/429}\\ -\sqrt{70/429}\\ -\sqrt{70/429}\\ -\sqrt{7/143}\\ \sqrt{56/143}\\ -\sqrt{20/99}\\ \sqrt{55/234}\\ -\sqrt{91/330}\\ \sqrt{56/195}\\ -\sqrt{35/286}\\ \end{array}$
274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7/2 7/2 7/2 7/2 7/2 7/2 -7/2 -7/2 -7/2 -	11/2 13/2 15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 11/2 15/2 15	9/2 9/2 9/2 9/2 -3/2 -3/2 -3/2 -3/2 -3/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2	$ \sqrt{54/143} $ $ -\sqrt{49/130} $ $ \sqrt{8/65} $ $ \sqrt{1/30} $ $ \sqrt{9/55} $ $ \sqrt{10/33} $ $ \sqrt{125/429} $ $ \sqrt{45/286} $ $ \sqrt{98/2145} $ $ \sqrt{4/715} $ $ -\sqrt{1/18} $ $ -\sqrt{121/630} $ $ -\sqrt{81/770} $ $ \sqrt{2/693} $ $ \sqrt{1618/9329} $ $ \sqrt{81/286} $ $ \sqrt{152/967} $ $ \sqrt{196/6435} $ $ \sqrt{1/6} $ $ \sqrt{1/210} $ $ -\sqrt{289/2310} $ $ -\sqrt{32/231} $ $ \sqrt{5/6006} $ $ \sqrt{13/66} $ $ \sqrt{91/330} $
299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-3/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 7/2	15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 13/2 15/2 9/2 11/2 13/2 15/2 9/2 11/2 15/2 11/2 15/2 11/2 11/2	1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 9/2 9/2 9/2 9/2 11/2	$ \sqrt{91/330} \sqrt{196/2145} \sqrt{3/14} \sqrt{1/77} -\sqrt{32/231} -\sqrt{361/3003} \sqrt{7/286} \sqrt{42/143} \sqrt{28/143} \sqrt{20/77} \sqrt{2/693} -\sqrt{256/1287} -\sqrt{7/143} \sqrt{70/429} \sqrt{140/429} \sqrt{140/429} \sqrt{10/33} -\sqrt{5/429} -\sqrt{35/143} \sqrt{7/715} \sqrt{28/65} \sqrt{45/143} -\sqrt{7/65} \sqrt{28/65} \sqrt{3/13} -\sqrt{98/195} $
323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347	2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7/2 7/2 7/2 -7/2 -7/2 -7/2 -7/2 -7/2 -7/	13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 1/2 3/2 5/2 7/2 9/2 11/2 15/2 3/2 5/2 9/2 11/2 15/2 5/2 5/2 9/2 11/2 5/2 5/2 7/2 9/2 11/2 15	11/2 11/2 -1/2 -1/2 -1/2 -1/2 -1/2 -1/2	$\sqrt{\frac{4/15}{\sqrt{1/36}}} \\ \sqrt{\frac{1/36}{\sqrt{7/45}}} \\ \sqrt{\frac{63/220}{\sqrt{28/99}}} \\ \sqrt{\frac{875/5148}{\sqrt{9/143}}} \\ \sqrt{\frac{9/143}{\sqrt{183/13733}}} \\ \sqrt{\frac{8/6435}{\sqrt{7/36}}} \\ -\sqrt{\frac{7/36}{\sqrt{4/45}}} \\ \sqrt{\frac{16/99}{\sqrt{487/1735}}} \\ \sqrt{\frac{28/143}{\sqrt{333/5099}}} \\ \sqrt{\frac{56/6435}{\sqrt{56/6435}}} \\ -\sqrt{\frac{1/5}{\sqrt{49/330}}} \\ \sqrt{\frac{45/286}{\sqrt{125/429}}} \\ \sqrt{\frac{11/65}{\sqrt{24/715}}} \\ -\sqrt{\frac{5/22}{\sqrt{5/22}}} \\$
348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4	-1/2 -1/2 -1/2 -1/2 -1/2 -1/2 1/2 1/2 1/2 1/2 1/2 3/2 3/2 3/2 3/2 5/2 5/2 7/2 -7/2 -7/2 -7/2 -7/2 -7/2 -7/2 -7/	7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 11/2 13/2 15/2 11/2 13/2 15/2 15/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 15/2 11/2 13/2 15/2 11/2 13/2 15/2 11/2 13/2 11/2 13/2	5/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 9/2 9/2 9/2 9/2 11/2 11/2 11/2 13/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	$-\sqrt{16/99} \sqrt{7/2574} \sqrt{32/143} \sqrt{7/2574} \sqrt{32/143} \sqrt{125/429} \sqrt{40/429} -\sqrt{28/99} -\sqrt{343/2574} \sqrt{6/143} \sqrt{289/858} \sqrt{8/39} -\sqrt{105/286} -\sqrt{8/143} \sqrt{27/130} \sqrt{24/65} -\sqrt{6/13} \sqrt{1/195} \sqrt{8/15} -\sqrt{7/15} \sqrt{8/15} -\sqrt{7/15} \sqrt{8/15} \sqrt{14/45} \sqrt{14/45} \sqrt{14/55} \sqrt{14/45} 1$
374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	-1/2 -7/2 -5/2 -5/2 -5/2 -5/2 -5/2 -5/2 -5/2 -5	15/2 3/2 5/2 7/2 9/2 11/2 13/2 15/2 5/2 7/2 9/2 11/2 13/2 15/2 7/2 9/2 11/2 13/2 15/2 11/2 13/2 15/2 11/2 13/2 11/2 13/2 11/2 13/2	1/2 1/2 3/2 3/2 3/2 3/2 3/2 3/2 3/2 5/2 5/2 5/2 5/2 5/2 7/2 7/2 7/2 7/2 7/2 9/2 9/2 9/2 9/2 11/2 11/2	$ \sqrt{1/6435} $ $ \sqrt{1/6435} $ $ \sqrt{1/6435} $ $ \sqrt{16/55} $ $ \sqrt{10/33} $ $ \sqrt{80/429} $ $ \sqrt{10/143} $ $ \sqrt{32/2145} $ $ \sqrt{1/715} $ $ \sqrt{4/33} $ $ \sqrt{10/33} $ $ \sqrt{140/429} $ $ \sqrt{80/429} $ $ \sqrt{80/429} $ $ \sqrt{80/429} $ $ \sqrt{80/429} $ $ \sqrt{81/43} $ $ \sqrt{11/43} $ $ \sqrt{14/99} $ $ \sqrt{448/1287} $ $ \sqrt{48/143} $ $ \sqrt{44/13} $ $ \sqrt{4/13} $ $ \sqrt{4/13} $ $ \sqrt{32/65} $
398 399 400	4 4 4	3/2 $3/2$ $5/2$	13/2 $15/2$ $13/2$	11/2 11/2 13/2	$ \sqrt{\frac{32/65}{\sqrt{1/5}}} $ $ \sqrt{\frac{8/15}{}} $

Table 35: $[j_1 \otimes j_2 = 4 \otimes 7/2]$

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Table 34: $[j_1 \otimes j_2 = 4 \otimes 3]$

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 $\sqrt{\frac{5/18}{5}}$

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 $\sqrt{\frac{25/126}{-}}$

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 $-\sqrt{\frac{121/1638}{-}}$

 $\sqrt[4]{\frac{25/198}{25}}$

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 $\sqrt{\frac{50/143}{-}}$

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 $\sqrt{625/3276}$

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 $-\sqrt{10/39}$ 25 2 -2-4 $\sqrt{4/33}$ 2 26 -4-2 $-\sqrt{9/286}$ 27 -42 -2 $\sqrt{1/286}$ 28 -42 -2 $-\sqrt{1/15}$ 29 -43 -1 $\sqrt{7/33}$ $\sqrt{49/165}$ 31 $\sqrt{35/143}$ 32 -43 -1 $-\sqrt{5/39}$ -133 -43 $\sqrt{7/165}$ -43 -134 $-\sqrt{7/858}$ -135 -43 $\sqrt{1/1430}$ -4-136 3 $\sqrt{1/9}$ 37 -44 0 $-\sqrt[4]{4/15}$ 38 -44 0 $\sqrt{28/99}$ 39 -44 $-\sqrt{\frac{98/495}{}}$ 40 -44 0 3 $\sqrt{14/143}$ 41 -44 4 0 $-\sqrt{\frac{4/117}{117}}$ 4 0 42 -4 $\sqrt{4/495}$ 0 43 -44 $\sqrt{1/858}$ 4 0 44 -4 $\sqrt{1/12870}$ 45 -44 0 $\sqrt{\frac{1/2}{}}$ 46 -3-4-7 $\sqrt[4]{1/2}$ 47 -7 $-\sqrt[4]{\frac{7}{15}}$ -3-3-648 $\sqrt{\frac{8/15}{}}$ 49 -3-3-6 $\sqrt{9/26}$ -250 -3-5 $-\sqrt{1/10}$ -3-2-551 $-\sqrt[3]{2/13}$ -3-2-552 $\sqrt[8]{\frac{1}{2/5}}$ -253-3-5 $\sqrt{35/143}$ 54-3-1-4 $\sqrt{\frac{5/26}{}}$ 55 -3-1-4 $\sqrt{1/110}$ 56 $-\sqrt{4/13}$ 57 $\sqrt{\frac{16/65}{-}}$ 58 -38 -4 $\sqrt{35/198}$ 59 -30 3 -3 $-\sqrt{63/286}$ 0 60 -34 -3 $\sqrt{1/117}$ 61 0 -35 -3 $\sqrt{\frac{5/33}{-}}$ 62-30 -3 $\sqrt{\frac{45/143}{-}}$ 63 -30 -3 $\sqrt[8]{\frac{5/39}{5}}$ 64 0 $-\sqrt{\frac{3/22}{}}$ 65 -3-2 $\sqrt{\frac{7/33}{}}$ 66 -31 -2 $-\sqrt[4]{\frac{5/143}{5/143}}$ -267 -31 $-\sqrt{5/78}$ 68 -31 -2 $\sqrt{3/11}$ -31 -269 6 $-\sqrt{\frac{32/143}{}}$ -3-270 1 $\sqrt[8]{143}$ 71-31 -2 $\sqrt{\frac{7/60}{1}}$ 72 -32 -1 $-\sqrt{25/132}$ 73 -32 -1 $\sqrt[4]{\frac{7}{165}}$ 74-32 3 -1 $\sqrt[8]{\frac{5/143}{5}}$ 75 -32 4 -1 $-\sqrt{35/156}$ 2 76 -35 -1 $\sqrt{169/660}$ 2 77 -36 -1 $-\sqrt{\frac{50/429}{}}$ 2 78 -3-1 $\sqrt{14/715}$ 79 -32 -1 $-\sqrt{1/9}$ 80 -33 0 $\sqrt{3/20}$ 81 -33 $-\sqrt[4]{\frac{7/396}{7/396}}$ 82 -33 0 $-\sqrt{\frac{49/990}{-}}$ 83 -33 0 3 $\sqrt{63/286}$ 84 -33 0 -33 0 85 $\sqrt{289/1980}$ -386 3 6 0 87 -33 0 $\sqrt{32/6435}$ 88 -33 0 $-\sqrt{\frac{1}{15}}$ 89 -34 1 $\sqrt{7/33}$ 90 -34 $-\sqrt{\frac{49/165}{}}$ 91 -34 3 $\sqrt{35/143}$ 92 -34 4 1 $-\sqrt{5/39}$ 93 4 -35 1 $\sqrt{7/165}$ 4 94 -36 1 4 95 -31 $\sqrt{1/1430}$ 96 -34 1 $\sqrt{4/15}$ 97 -2-4-6 $\sqrt{1/2}$ 98 -2-4-6 $\sqrt[4]{\frac{7/30}{5}}$ 99 -6 $-\sqrt{\frac{9/26}{5}}$ 100 -2-3-5 $-\sqrt[4]{\frac{1}{10}}$ 101 -2-3-5 $\sqrt[\mathbf{v}]{\frac{2/13}{2}}$ 102 -2-3-5 $\sqrt{\frac{2}{5}}$ -3-2-5103 $\sqrt{45/143}$ -2104-24 -4 $-\sqrt{\frac{14/55}{14/55}}$ 105-2-26 -4 $\sqrt{28/65}$ 106 -2-2-4 $-\sqrt[8]{25/99}$ 107 -2-13 -3 $\sqrt{\frac{5/143}{}}$ 108 -24 -3-1 $\dot{\sqrt{35/234}}$ 109 -2-15 -3 $-\sqrt{7/66}$ 110 -26 -3-1 $-\sqrt{14/143}$ 111 -2-1-3 $\sqrt{14/39}$ 112 -2-1-3 $\sqrt[4]{\frac{15/77}{15/77}}$ 113-20 2 -2 $-\sqrt{\frac{5}{66}}$ 114-20 -2 $\sqrt{11/182}$ 115 -20 -2 $\sqrt[4]{7/39}$ 116 -20 $-\sqrt{35/143}$ 117-20 -2 $\sqrt{35/143}$ 118 -20 -2 $-\sqrt{3/20}$ 119 -21 -1 $\sqrt{27/308}$ -1-2120 1 2 $\sqrt{4/165}$ 121-21 3 -1 $\sqrt{\frac{180/1001}{-}}$ 122-21 4 -1 $\sqrt{5/156}$ 123-21 -1 $\sqrt{21/220}$ 124 -21 6 -1 $-\sqrt{\frac{42/143}{}}$ 125 -21 -1 $\sqrt{98/715}$ 126 -21 8 -12 127 -20 0 2 128 -21 0 -22 0 129 2 $\sqrt{169/990}$ 2 130 -23 0 $-\sqrt{\frac{11/182}{11/182}}$ 131 -20 $\sqrt{4/117}$ 132 -2 $\sqrt{\frac{11/45}{-}}$ -22 0 $\sqrt{98/429}$ 134 -22 0 $\sqrt{392/6435}$ 2 0 135 -2 $\sqrt{\frac{7/60}{}}$ 136 -23 1 $\sqrt{\frac{25/132}{}}$ -2137 3 1 $\sqrt[4]{\frac{7/165}{1}}$ 138-23 3 1 $\sqrt[8]{\frac{5}{143}}$ 139 -23 4 1 $-\sqrt{35/156}$ 140-23 1 $\sqrt{169/660}$ 141 -23 $-\sqrt{\frac{50/429}{}}$ 142 -23 $\sqrt{14/715}$ 143-23 1 8 $\sqrt{2/33}$ 4 2 2 -2144 $-\sqrt{7/33}$ 4 2 145 -23 $\sqrt{45/143}$ 4 2 146 -24 $-\sqrt{\frac{10/39}{10/39}}$ 147-24 2 $\sqrt[4]{\frac{4/33}{2}}$ 148-24 2 $-\sqrt[8]{\frac{9}{286}}$ 149-24 2 $\sqrt{\frac{1/286}{-}}$ -24 150 $\sqrt{\frac{2}{13}}$ 151 -1-4-5 $\sqrt{\frac{2/5}{}}$ 152 -1-4-5 $\sqrt{\frac{9/26}{-}}$ 153 -1-4-5 $\sqrt[4]{1/10}$ -1-4-5154 8 $-\sqrt{\frac{35/143}{35/143}}$ 155-1-34 -4 $-\sqrt{\frac{5/26}{5}}$ 156-1-3-4 $\sqrt{1/110}$ 157 -1-36 -4 $\sqrt{\frac{4/13}{}}$ 158 -3-4 $\sqrt{\frac{16/65}{16}}$ -1-31598 -4 $\sqrt{25/99}$ 160 -1-23 -3 $\sqrt{5/143}$ -2161 -14 -3 $-\sqrt{35/234}$ 162 -1-25 -3-2163 -16 -3 $\sqrt{14/143}$ 164 -1-2-3 $\sqrt{\frac{14/39}{-14/39}}$ 165 -1-2-3 $\sqrt[.]{50/231}$ 166 -2 $\sqrt{180/1001}$ 167 -1-1-2 $-\sqrt{7/33}$ 168 -1-1-2 $\sqrt{56/143}$ -2169 -1-10 -1170 -11 $-\sqrt[8]{\frac{5/462}{5/462}}$ -10 -1171 2 $-\sqrt[8]{3/22}$ -11720 3 -1 $\sqrt{81/2002}$ 173-10 4 -1 $\sqrt{\frac{3/26}{}}$ 174-10 5 -1 $-\sqrt[8]{\frac{7}{66}}$ 175-10 6 -1 $-\sqrt{35/429}$ 176 -10 -1 $\sqrt{49/143}$ 177 -10 8 -1 $-\sqrt{\frac{1/9}{1/9}}$ 1 -10 0 178 $\sqrt{1/60}$ 1 179 -11 0 $\sqrt{289/2772}$ 1 0 180 -12 181 -11 3 0 $\sqrt{81/2002}$ 182-11 0 183 1 v 1/1980 -1184 0 $-\sqrt{98/429}$ 185 -11 0 $\sqrt{683/2803}$ 186 -11 0 -12 1 187 $\sqrt{27/308}$ -12 188 2 1 $\sqrt{4/165}$ 189-12 3 1 $-\sqrt{\frac{180/1001}{1001}}$ 190 -12 4 1 $\sqrt{\frac{5/156}{5}}$ 191 -12 5 $\sqrt{21/220}$ 192 -12 6 1 $-\sqrt{\frac{42/143}{}}$ 193 -12 $\sqrt{98/715}$ 194 -12 1 8 $-\sqrt{\frac{3/22}{}}$ 3 2 2 195 -1 $\sqrt{7/33}$ 3 2 196 -13 $-\sqrt[8]{\frac{5/143}{5}}$ 3 2 197 -14 $-\frac{\sqrt{5/78}}{\sqrt{5}}$ 198 -13 5 2 $\sqrt{\frac{3/11}{1}}$ 199 -13 2 $\sqrt[4]{32/143}$ 200 3 2 $\sqrt[4]{8/143}$ 201 $-\sqrt{7/99}$ 202 -14 3 $\sqrt{35/143}$ 203 -13 $-\sqrt{40/117}$ 204 -14 3 $\sqrt{\frac{8}{33}}$ 205 -14 6 3 $\sqrt{\frac{25/286}{-}}$ 206 -14 3 $\sqrt{\frac{1/78}{}}$ 207 -14 3 $\sqrt{14/143}$ 208 0 -4 $\sqrt{\frac{4/13}{1}}$ 0 2095 -4 $\sqrt[4]{4/11}$ 210 0 -46 -4 $\sqrt{\frac{5/26}{5}}$ 2110 -4-4 $\sqrt{1/26}$ 0 212 8 -4-4 $-\sqrt{35/198}$ 0 213 -33 -3 $-\sqrt{63/286}$ 0 214 -34 -3 $-\sqrt{1/117}$ 2150 -35 -3 $\sqrt[8]{\frac{5}{33}}$ 2160 -36 -3 $\sqrt{45/143}$ 217 0 -3 $\sqrt{\frac{5/39}{}}$ 218 -3-3 $\sqrt{\frac{15/77}{-}}$ 219 0 -2-2 $\sqrt{5/66}$ 0 -2220 -23 $-\sqrt{\frac{11/182}{-1}}$ 221 0 -24 -2 $-\sqrt{7/39}$ -2-20 222 5 $\sqrt{\frac{35}{143}}$ 2230 -2-2 $\sqrt{35/143}$ 224 0 -2-2 $-\sqrt{\frac{1}{6}}$ 2250 1 $\sqrt{\frac{5/462}{}}$ 226 0 -1-1 $\sqrt[4]{\frac{3}{22}}$ 0 227 -13 -1 $\sqrt{81/2002}$ 228 0 -14 -1 $-\sqrt{3/26}$ 0 229 -15 -1 $-\sqrt[4]{7/66}$ 0 230 -16 -1 $\sqrt{35/429}$ 231 0 -1-1 $\sqrt{49/143}$ 232 0 -1-12330 0 0 234 0 0 0 $\sqrt{162/1001}$ 235 0 0 $-\sqrt{\frac{20/99}{}}$ 236 0 0 0 $\sqrt{\frac{1}{490/1287}}$ 0 0 0 237 0 238 1 1 $-\sqrt[8]{\frac{5/462}{5/462}}$ 0 239 1 1 $-\sqrt[8]{3/22}$ 2400 1 3 1 $\sqrt{81/2002}$ 241 0 1 4 1 $\sqrt{\frac{3/26}{1}}$ 2420 1 $-\sqrt[8]{\frac{7}{66}}$ 243 0 6 $-\sqrt{\frac{35/429}{}}$ 0 244 1 1 $\sqrt{49/143}$ 0 1 1 245 8 $\sqrt{15/77}$ 0 2 2 2 246 $-\sqrt{5/66}$ 0 2 2 247 3 $-\sqrt{11/182}$ 0 2 2 248 4 $\sqrt[8]{\frac{7}{39}}$ 249 0 2 5 2 · \sqrt{35/143} 2500 2 2 $\sqrt{35/143}$ 251 0 2 2 $\sqrt{\frac{35/198}{-198}}$ 252 3 3 $-\sqrt{\frac{63/286}{63/286}}$ 253 0 3 3 $\sqrt{1/117}$ 0 254 3 3 $\sqrt{\frac{5/33}{-}}$ 255 0 3 6 3 $-\sqrt{45/143}$ 0 256 3 3 $\sqrt{5/39}$ 2570 3 3 $\sqrt{14/143}$ 258 0 4 4 4 $-\sqrt{\frac{4/13}{4/13}}$ 259 0 4 4 $\sqrt{\frac{4/11}{2}}$ 260 0 4 6 4 $-\sqrt{\frac{5}{26}}$ 0 261 4 4 $\sqrt{1/26}$ 0 4 4 262 8 $\sqrt[4]{7/99}$ 263 1 3 -4-3 $\sqrt{35/143}$ 264 1 -44 -3 $\sqrt{40/117}$ 265 1 -45 -3 $\sqrt{8/33}$ 266 1 -46 -3 $\sqrt{25/286}$ 267 1 -4-3 $\sqrt{\frac{1/78}{1}}$ 268 1 -3 $-\sqrt{\frac{3}{22}}$ 269 -3-2 $-\sqrt{\frac{7}{33}}$ 270 1 -33 -2 $-\sqrt{\frac{5/143}{5}}$ -2271 1 -34 $\sqrt{5/78}$ 1 -3-2272 $\sqrt[4]{\frac{3}{11}}$ -2273 1 -36 $\sqrt{32/143}$ 2741 -3-2 $\sqrt[8]{\frac{8/143}{-}}$ 2751 -3-2 $\sqrt{\frac{3/20}{}}$ 2761 -2 $\sqrt{27/308}$ 277 2 278 1 -23 -1 $-\sqrt{180/1001}$

Table 36: $[j_1 \otimes j_2 = 4 \otimes 4]$

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 $\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM \rangle$

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 $-\sqrt{\frac{4/13}{1}}$

 $\sqrt{^{4/11}}$

 $-\sqrt{\frac{5/26}{5}}$

 $\sqrt{1/26}$

 $-\sqrt{7/99}$

 $\sqrt{\frac{35/143}{}}$

 $-\sqrt{40/117}$

 $\sqrt{8/33}$

 $\sqrt{25/286}$

 $\sqrt{\frac{1/78}{-}}$

 $\sqrt{\frac{2/33}{-}}$

 $-\frac{1}{\sqrt{7/33}}$

 $\sqrt{45/143}$

 $\sqrt{121/468}$

 $\sqrt{6/143}$

 $\sqrt{7/858}$

 $\sqrt{1/9}$

 $\sqrt{1/15}$

 $\sqrt{7/66}$

 $\sqrt{\frac{1/6}{}}$

 $\sqrt{9/110}$

 $\sqrt{3/20}$

 $\sqrt{1/9}$

 $\sqrt{\frac{1/6}{}}$

 $\sqrt{4/165}$

 $-\sqrt{5/156}$

 $\sqrt{21/220}$

 $\sqrt{42/143}$

 $\sqrt[8]{98/715}$

 $-\sqrt{\frac{1}{9}}$

 $\sqrt{289/2772}$

 $\sqrt{\frac{9/110}{2}}$

 $-\sqrt[8]{81/2002}$

 $-\sqrt{9/52}$

 $\sqrt{98/429}$

 $\sqrt{683/2803}$

 $-\sqrt{\frac{1/6}{6}}$

 $-\sqrt{\frac{5/462}{5}}$

 $\sqrt[40]{\frac{3}{22}}$

 $\sqrt{81/2002}$

 $-\sqrt{3/26}$

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 $\sqrt{35/429}$

 $\sqrt{\frac{49/143}{}}$

 $\sqrt{50/231}$

 $\sqrt{180/1001}$

 $-\sqrt{7/33}$

 $\sqrt{56/143}$

 $-\sqrt{25/99}$

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 $\sqrt{\frac{7/66}{1}}$

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 $\sqrt[4]{\frac{14/39}{-}}$

 $-\sqrt{\frac{35/143}{-}}$

 $\sqrt[8]{\frac{5/26}{5}}$

 $\sqrt[4]{1/110}$

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 $-\sqrt[8]{\frac{7/165}{7/165}}$

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 $\sqrt{392/6435}$

 $\sqrt{\frac{3/20}{}}$

 $\sqrt{\frac{27/308}{-}}$

 $-\sqrt{4/165}$

 $-\sqrt{180/1001}$

 $-\sqrt{5/156}$

 $\sqrt{\frac{21/220}{-}}$

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 $\sqrt[8]{\frac{5/66}{5}}$

 $\sqrt[\mathbf{v}]{\frac{11/182}{1}}$

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 $\sqrt[\mathbf{v}]{4/15}$

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 $\sqrt[4]{\frac{7/165}{5}}$

 $\sqrt[4]{\frac{7/858}{5}}$

 $\sqrt{1/1430}$

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4

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-1

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1 1

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4 5

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7 8

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0

1

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1 6

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2

2

2

2

2

3

3

3

4

4

4

4

4

5

6

6

7

7

3

3 0

5 0

6

5 1 /100/693

 $/_{16/693}$