

Eigenfunctions of the f^3 Configuration

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Wave functions for three equivalent f electrons which are eigenfunctions of L^2 , S^2 , J^2 , and J_z are given.

As a preliminary step in some recent theoretical work on Nd^{3+} and Er^{3+} a set of three-electron wave functions was obtained which are eigenfunctions of L^2 , S^2 , J^2 , and J_z . These functions are linear combinations of products of one-electron functions which have the usual form

$$f(r)Y_3^m(\theta, \phi) \chi_{m_s}$$

Y_3^m is a normalized spherical harmonic and χ_{m_s} is a spin eigenfunction.

The three-electron eigenfunctions may be useful to other research workers so they are tabulated here. A possible use for them is in calculating matrix elements or transition probabilities.

To understand the notation used for the wave functions consider the following example: the ket

$$|\bar{3} 2 - 2 \rangle \equiv |\bar{3} \rangle |2 \rangle |-2 \rangle$$

is to be understood as a product of one-electron functions. For the first electron m_l is 3 and m_s is $-\frac{1}{2}$; for the second electron m_l is 2 and m_s is $+\frac{1}{2}$; for the third electron m_l is -2 and m_s is $+\frac{1}{2}$.

The functions given in the tables can be antisymmetrized in an obvious way, but this antisymmetrization is usually not necessary in calculations.

The phases of the functions are adjusted so that matrix elements of the spin orbit interaction have the signs given by Judd and Loudon.¹

There are two ${}^2\text{H}_{11/2}$, ${}^2\text{H}_{9/2}$, ${}^2\text{G}_{9/2}$, ${}^2\text{G}_{7/2}$, ${}^2\text{F}_{7/2}$, ${}^2\text{F}_{5/2}$, ${}^2\text{D}_{5/2}$, and ${}^2\text{D}_{3/2}$ terms. These terms are labeled by additional quantum numbers which refer to group theoretical properties of the wave functions.²

Half of the 364 wave functions are given here. The remaining functions can be obtained by reversing the signs of m_l and m_s in the kets.

The tabulated functions can also be used for the system of 11 equivalent f electrons.

TABLE 1. $M = 17/2$

	N^{-2} $3\bar{3}2 \rangle$	
${}^2\text{L}_{17/2}$	1	1

TABLE 2. $M = 15/2$

	N^{-2}	$ \bar{3}\bar{3}\bar{2} \rangle$	$ \bar{3}\bar{3}1 \rangle$	$ \bar{3}2\bar{2} \rangle$	$ \bar{3}21 \rangle$
${}^2\text{L}_{17/2}$	17	1	$\sqrt{10}$	$-\sqrt{6}$	0
${}^2\text{L}_{15/2}$	136	$8\sqrt{2}$	$-\sqrt{5}$	$\sqrt{3}$	0
${}^2\text{K}_{15/2}$	8	0	$\sqrt{3}$	$\sqrt{5}$	0
${}^4\text{I}_{15/2}$	1	0	0	0	-1

TABLE 3. $M = 13/2$

	N^{-2}	$3\bar{3}\bar{1}$	$3\bar{3}0$	$3\bar{2}\bar{1}$	320	$3\bar{2}1$	$\bar{3}2\bar{2}$	$\bar{3}21$
${}^2\text{L}_{17/2}$	136	$\sqrt{10}$	$\sqrt{30}$	$-\sqrt{15}$	0	$2\sqrt{15}$	$-\sqrt{6}$	$-\sqrt{15}$
${}^2\text{L}_{15/2}$	136	$5\sqrt{3}$	-2	$\sqrt{2}$	0	$-2\sqrt{2}$	$-3\sqrt{5}$	$\sqrt{2}$
${}^2\text{K}_{15/2}$	120	$\sqrt{3}$	6	$5\sqrt{2}$	0	$-2\sqrt{2}$	$\sqrt{5}$	$-3\sqrt{2}$
${}^4\text{I}_{15/2}$	15	0	0	-1	$-2\sqrt{3}$	-1	0	-1
${}^2\text{K}_{13/2}$	840	$7\sqrt{6}$	$-3\sqrt{2}$	-5	0	2	$7\sqrt{10}$	3
${}^4\text{I}_{13/2}$	15	0	0	-2	$\sqrt{3}$	-2	0	-2
${}^2\text{I}_{13/2}$	21	0	3	$-\sqrt{2}$	0	$-\sqrt{2}$	0	$2\sqrt{2}$

¹ B. R. Judd and R. Loudon, Proc. Roy. Soc. (London) **A251**, 127 (1959).

² G. Racah, Phys. Rev. **76**, 1352 (1949); B. R. Judd, Proc. Roy. Soc. (London) **A250**, 562 (1959).

TABLE 4. $M=11/2$

	N^{-2}	$ \bar{3}\bar{3}0\rangle$	$ \bar{3}\bar{3}-1\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{2}-1\rangle$	$ \bar{3}\bar{2}\bar{1}\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{1}\bar{1}\rangle$	$ \bar{3}\bar{1}0\rangle$	$ \bar{3}\bar{2}\bar{1}\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{2}\bar{1}\rangle$	$ \bar{2}\bar{2}\bar{1}\rangle$
$^2L_{17/2}$	136	$\sqrt{6}$	$2\sqrt{2}$	-2	0	$\sqrt{3}$	6	$-\sqrt{30}$	0	$-2\sqrt{3}$	-4	$\sqrt{3}$	$3\sqrt{2}$
$^2L_{15/2}$	952	14	$-2\sqrt{3}$	$\sqrt{6}$	0	$7\sqrt{2}$	$-3\sqrt{6}$	$3\sqrt{5}$	0	$-14\sqrt{2}$	$2\sqrt{6}$	$7\sqrt{2}$	$-3\sqrt{3}$
$^2K_{15/2}$	840	6	$6\sqrt{3}$	$5\sqrt{6}$	0	$3\sqrt{2}$	$\sqrt{6}$	$7\sqrt{5}$	0	$2\sqrt{2}$	$-6\sqrt{6}$	$-5\sqrt{2}$	$\sqrt{3}$
$^4I_{15/2}$	105	0	0	$-2\sqrt{3}$	-6	-1	$-2\sqrt{3}$	0	$-\sqrt{30}$	-1	$-2\sqrt{3}$	-1	0
$^2K_{13/2}$	10920	$39\sqrt{2}$	$-6\sqrt{6}$	$-10\sqrt{3}$	0	39	$-2\sqrt{3}$	$-7\sqrt{10}$	0	26	$12\sqrt{3}$	-65	$-\sqrt{6}$
$^4I_{13/2}$	195	0	0	$-3\sqrt{3}$	6	-4	$-3\sqrt{3}$	0	$\sqrt{30}$	-4	$-3\sqrt{3}$	-4	0
$^2I_{13/2}$	273	3	$6\sqrt{3}$	$-2\sqrt{6}$	0	$-2\sqrt{2}$	$\sqrt{6}$	0	0	$\sqrt{2}$	$\sqrt{6}$	$\sqrt{2}$	$-6\sqrt{3}$
$^4I_{11/2}$	3003	0	0	$11\sqrt{2}$	$-3\sqrt{6}$	$-11\sqrt{6}$	$11\sqrt{2}$	0	$-3\sqrt{5}$	$-11\sqrt{6}$	$11\sqrt{2}$	$-11\sqrt{6}$	0
$^2I_{11/2}$	546	$6\sqrt{6}$	$-3\sqrt{2}$	2	0	$-8\sqrt{3}$	-1	0	0	$4\sqrt{3}$	-1	$4\sqrt{3}$	$3\sqrt{2}$
$^2H_{11/2}(210)(21)$	273	0	$\sqrt{5}$	$3\sqrt{10}$	0	0	$-2\sqrt{10}$	$-6\sqrt{3}$	0	0	$-\sqrt{10}$	0	$-2\sqrt{5}$
$^2H_{11/2}(210)(11)$	6	0	$\sqrt{2}$	0	0	0	-1	0	0	0	1	0	$\sqrt{2}$
$^4G_{11/2}$	11	0	0	0	$\sqrt{5}$	0	0	0	$-\sqrt{6}$	0	0	0	0

TABLE 5. $M=9/2$

	N^{-2}	$ \bar{3}\bar{3}-1\rangle$	$ \bar{3}\bar{3}-2\rangle$	$ \bar{3}\bar{2}-1\rangle$	$ \bar{3}\bar{2}-2\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{2}-1\rangle$	$ \bar{3}\bar{1}0\rangle$	$ \bar{3}\bar{1}-1\rangle$	$ \bar{3}\bar{1}0\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{2}-1\rangle$	$ \bar{3}\bar{2}\bar{1}\rangle$	$ \bar{3}\bar{2}0\rangle$	$ \bar{3}\bar{1}\bar{1}\rangle$	$ \bar{3}\bar{1}0\rangle$	$ \bar{2}\bar{2}\bar{1}\rangle$	$ \bar{2}\bar{2}0\rangle$	$ \bar{2}\bar{1}\bar{1}\rangle$	$ \bar{2}\bar{1}0\rangle$
$^2L_{17/2}$	476	$2\sqrt{2}$	$\sqrt{5}$	$-\sqrt{3}$	0	4	$4\sqrt{3}$	$-2\sqrt{10}$	0	$3\sqrt{10}$	-6	$-3\sqrt{3}$	0	2	$-\sqrt{30}$	$-\sqrt{10}$	$3\sqrt{2}$	$4\sqrt{6}$	$-3\sqrt{5}$	0
$^2L_{15/2}$	12376	26	$-2\sqrt{10}$	$2\sqrt{6}$	0	$26\sqrt{2}$	$-8\sqrt{6}$	$8\sqrt{5}$	0	$-12\sqrt{5}$	$-39\sqrt{2}$	$6\sqrt{6}$	0	$13\sqrt{2}$	$-13\sqrt{15}$	$4\sqrt{5}$	39	$-16\sqrt{3}$	$6\sqrt{10}$	0
$^2K_{15/2}$	3640	$6\sqrt{3}$	$2\sqrt{30}$	$10\sqrt{2}$	0	$6\sqrt{6}$	$8\sqrt{2}$	$8\sqrt{15}$	0	$-4\sqrt{15}$	$-\sqrt{6}$	$-18\sqrt{2}$	0	$-5\sqrt{6}$	$7\sqrt{5}$	$-4\sqrt{15}$	$\sqrt{3}$	16	$2\sqrt{30}$	0
$^4I_{15/2}$	455	0	0	-6	$-2\sqrt{10}$	$-2\sqrt{3}$	-6	$-\sqrt{30}$	$-4\sqrt{10}$	$-\sqrt{30}$	$-2\sqrt{3}$	-6	-1	$-2\sqrt{3}$	0	$-\sqrt{30}$	0	0	0	$-2\sqrt{5}$
$^2K_{13/2}$	1820	$6\sqrt{6}$	$-\sqrt{15}$	-5	0	$12\sqrt{3}$	-4	$-2\sqrt{30}$	0	$\sqrt{30}$	$-2\sqrt{3}$	9	0	$-10\sqrt{3}$	$7\sqrt{10}$	$\sqrt{30}$	$\sqrt{6}$	$-4\sqrt{2}$	$-\sqrt{15}$	0
$^4I_{13/2}$	390	0	0	$-2\sqrt{3}$	$\sqrt{30}$	-7	$-2\sqrt{3}$	$-\sqrt{10}$	$2\sqrt{30}$	$-\sqrt{10}$	-7	$-2\sqrt{3}$	$-2\sqrt{3}$	-7	0	$-\sqrt{10}$	0	0	0	$\sqrt{15}$
$^2I_{13/2}$	546	6	$3\sqrt{10}$	$-2\sqrt{6}$	0	$-\sqrt{2}$	$4\sqrt{6}$	$-2\sqrt{5}$	0	$\sqrt{5}$	$-\sqrt{2}$	$-2\sqrt{6}$	0	$2\sqrt{2}$	0	$\sqrt{5}$	-6	$-6\sqrt{3}$	$3\sqrt{10}$	0
$^4I_{11/2}$	33033	0	0	$19\sqrt{6}$	$-6\sqrt{15}$	$-44\sqrt{2}$	$19\sqrt{6}$	$19\sqrt{5}$	$-12\sqrt{15}$	$19\sqrt{5}$	$-44\sqrt{2}$	$19\sqrt{6}$	$-33\sqrt{6}$	$-44\sqrt{2}$	0	$19\sqrt{5}$	0	0	0	$-3\sqrt{30}$
$^2I_{11/2}$	6006	$33\sqrt{2}$	$-6\sqrt{5}$	$4\sqrt{3}$	0	-11	$-8\sqrt{3}$	$2\sqrt{10}$	0	$-\sqrt{10}$	-11	$4\sqrt{3}$	0	22	0	$-\sqrt{10}$	$-33\sqrt{2}$	$6\sqrt{6}$	$-6\sqrt{5}$	0
$^2H_{11/2}(210)(21)$	3003	$\sqrt{5}$	$5\sqrt{2}$	$6\sqrt{30}$	0	$\sqrt{10}$	$-3\sqrt{30}$	-6	0	16	$2\sqrt{10}$	$-3\sqrt{30}$	0	$-3\sqrt{10}$	$-6\sqrt{3}$	-10	$-2\sqrt{5}$	$-6\sqrt{15}$	$-8\sqrt{2}$	0
$^2H_{11/2}(210)(11)$	66	$\sqrt{2}$	$2\sqrt{5}$	0	0	-1	0	0	0	$-\sqrt{10}$	1	0	0	0	0	$\sqrt{10}$	$\sqrt{2}$	0	$-2\sqrt{5}$	0
$^4G_{11/2}$	121	0	0	$\sqrt{5}$	$5\sqrt{2}$	0	$\sqrt{5}$	$-\sqrt{6}$	$-\sqrt{2}$	$-\sqrt{6}$	0	$\sqrt{5}$	0	0	0	$-\sqrt{6}$	0	0	0	-6
$^4I_{9/2}$	9438	0	0	$2\sqrt{15}$	$-\sqrt{6}$	$-11\sqrt{5}$	$2\sqrt{15}$	$5\sqrt{2}$	$-2\sqrt{6}$	$5\sqrt{2}$	$-11\sqrt{5}$	$2\sqrt{15}$	$22\sqrt{15}$	$-11\sqrt{5}$	0	$5\sqrt{2}$	0	0	0	$-\sqrt{3}$
$^2H_{9/2}(210)(21)$	15015	$-5\sqrt{10}$	5	$6\sqrt{15}$	0	$-10\sqrt{5}$	$-3\sqrt{15}$	$-3\sqrt{2}$	0	$8\sqrt{2}$	$-20\sqrt{5}$	$-3\sqrt{15}$	0	$30\sqrt{5}$	$30\sqrt{6}$	$-5\sqrt{2}$	$10\sqrt{10}$	$-3\sqrt{30}$	-8	0
$^2H_{9/2}(210)(11)$	66	$-2\sqrt{5}$	$\sqrt{2}$	0	0	$\sqrt{10}$	0	0	0	-1	$-\sqrt{10}$	0	0	0	0	1	$-2\sqrt{5}$	0	$-\sqrt{2}$	0
$^4G_{9/2}$	1452	0	0	$-4\sqrt{10}$	15	0	$-4\sqrt{10}$	$8\sqrt{3}$	-3	$8\sqrt{3}$	0	$-4\sqrt{10}$	0	0	0	$8\sqrt{3}$	0	0	0	$-9\sqrt{2}$
$^2G_{9/2}(210)(21)$	455	0	$-5\sqrt{3}$	$3\sqrt{5}$	0	0	$\sqrt{5}$	$-3\sqrt{6}$	0	$-2\sqrt{6}$	0	$-4\sqrt{5}$	0	0	0	$5\sqrt{6}$	0	$\sqrt{10}$	$2\sqrt{3}$	0
$^2G_{9/2}(210)(20)$	231	0	$-3\sqrt{6}$	$-\sqrt{10}$	0	0	$2\sqrt{10}$	$2\sqrt{3}$	0	$-\sqrt{3}$	0	$-\sqrt{10}$	0	0	0	$-\sqrt{3}$	0	$-3\sqrt{5}$	$-3\sqrt{6}$	0
$^4F_{9/2}$	4	0	0	0	-1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	$-\sqrt{2}$

TABLE 6. $M=7/2$

	N^{-2}	$\bar{3}\bar{3}-\bar{2}$	$\bar{3}\bar{3}-3$	$3\bar{2}-\bar{2}$	$3\bar{2}-3$	$\bar{3}\bar{2}-\bar{1}$	$\bar{3}\bar{2}-2$	$3\bar{1}-\bar{1}$	$3\bar{1}-2$	$\bar{3}\bar{1}\bar{0}$	$\bar{3}\bar{1}-1$	$3\bar{0}\bar{0}$
${}^2L_{17/2}$	6188	5	$\sqrt{6}$	$-\sqrt{6}$	0	$3\sqrt{15}$	$5\sqrt{6}$	$-5\sqrt{6}$	0	$5\sqrt{2}$	$10\sqrt{6}$	$-10\sqrt{6}$
${}^2L_{15/2}$	12376	$2\sqrt{30}$	$-\sqrt{5}$	$\sqrt{5}$	0	$18\sqrt{2}$	$-5\sqrt{5}$	$5\sqrt{5}$	0	$4\sqrt{15}$	$-10\sqrt{5}$	$10\sqrt{5}$
${}^2K_{15/2}$	10920	$2\sqrt{30}$	$3\sqrt{5}$	$5\sqrt{5}$	0	$18\sqrt{2}$	$7\sqrt{5}$	$17\sqrt{5}$	0	$4\sqrt{15}$	$-2\sqrt{5}$	$18\sqrt{5}$
${}^4I_{15/2}$	1365	0	0	$-2\sqrt{10}$	$-\sqrt{15}$	-6	$-2\sqrt{10}$	$-4\sqrt{10}$	-15	$-\sqrt{30}$	$-4\sqrt{10}$	0
${}^2K_{13/2}$	60060	$11\sqrt{15}$	$-3\sqrt{10}$	$-5\sqrt{10}$	0	99	$-7\sqrt{10}$	$-17\sqrt{10}$	0	$11\sqrt{30}$	$2\sqrt{10}$	$-18\sqrt{10}$
${}^4I_{13/2}$	4290	0	0	$-\sqrt{10}$	$2\sqrt{15}$	-18	$-\sqrt{10}$	$-2\sqrt{10}$	30	$-3\sqrt{30}$	$-2\sqrt{10}$	0
${}^2I_{13/2}$	6006	$3\sqrt{30}$	$6\sqrt{5}$	$-4\sqrt{5}$	0	$6\sqrt{2}$	$14\sqrt{5}$	$-8\sqrt{5}$	0	$-\sqrt{15}$	$10\sqrt{5}$	$-6\sqrt{5}$
${}^4I_{11/2}$	33033	0	0	$16\sqrt{3}$	$-9\sqrt{2}$	$-5\sqrt{30}$	$16\sqrt{3}$	$32\sqrt{3}$	$-9\sqrt{30}$	-25	$32\sqrt{3}$	0
${}^2I_{11/2}$	6006	30	$-3\sqrt{6}$	$2\sqrt{6}$	0	$4\sqrt{15}$	$-7\sqrt{6}$	$4\sqrt{6}$	0	$-5\sqrt{2}$	$-5\sqrt{6}$	$3\sqrt{6}$
${}^2H_{11/2}(210)(21)$	15015	$5\sqrt{2}$	$5\sqrt{3}$	$30\sqrt{3}$	0	$3\sqrt{30}$	$-10\sqrt{3}$	$24\sqrt{3}$	0	10	$\sqrt{3}$	$-22\sqrt{3}$
${}^2H_{11/2}(210)(11)$	66	2	$\sqrt{6}$	0	0	0	$\sqrt{6}$	0	0	$-\sqrt{2}$	$-\sqrt{6}$	$\sqrt{6}$
${}^4G_{11/2}$	605	0	0	$5\sqrt{2}$	$5\sqrt{3}$	$\sqrt{5}$	$5\sqrt{2}$	$-\sqrt{2}$	$4\sqrt{5}$	$-\sqrt{6}$	$-\sqrt{2}$	0
${}^4I_{9/2}$	9438	0	0	$3\sqrt{6}$	-2	$-6\sqrt{15}$	$3\sqrt{6}$	$6\sqrt{6}$	$-2\sqrt{15}$	$-15\sqrt{2}$	$6\sqrt{6}$	0
${}^2H_{9/2}(210)(21)$	45045	$-15\sqrt{3}$	$5\sqrt{2}$	$30\sqrt{2}$	0	$-27\sqrt{5}$	$-10\sqrt{2}$	$24\sqrt{2}$	0	$-15\sqrt{6}$	$\sqrt{2}$	$-22\sqrt{2}$
${}^2H_{9/2}(210)(11)$	198	$-3\sqrt{6}$	2	0	0	0	2	0	0	$3\sqrt{3}$	-2	2
${}^4G_{9/2}$	13068	0	0	-25	$15\sqrt{6}$	$-8\sqrt{10}$	-25	5	$12\sqrt{10}$	$16\sqrt{3}$	5	0
${}^2G_{9/2}(210)(21)$	4095	$-5\sqrt{3}$	$-15\sqrt{2}$	$15\sqrt{2}$	0	$4\sqrt{5}$	$-10\sqrt{2}$	$-3\sqrt{2}$	0	$-5\sqrt{6}$	$-7\sqrt{2}$	$-6\sqrt{2}$
${}^2G_{9/2}(210)(20)$	2079	$-3\sqrt{6}$	-18	-10	0	$\sqrt{10}$	2	2	0	$\sqrt{3}$	14	18
${}^4F_{9/2}$	36	0	0	-1	$-\sqrt{6}$	0	-1	1	0	0	1	0
${}^4G_{7/2}$	41580	0	0	$-35\sqrt{2}$	$15\sqrt{3}$	$28\sqrt{5}$	$-35\sqrt{2}$	$7\sqrt{2}$	$28\sqrt{5}$	$-28\sqrt{6}$	$7\sqrt{2}$	0
${}^2G_{7/2}(210)(21)$	16380	$20\sqrt{6}$	-15	15	0	$-16\sqrt{10}$	-10	-3	0	$40\sqrt{3}$	-7	-6
${}^2G_{7/2}(210)(20)$	4158	$12\sqrt{6}$	-9	-5	0	$-4\sqrt{10}$	1	1	0	$-4\sqrt{3}$	7	9
${}^4F_{7/2}$	36	0	0	$\sqrt{2}$	$-\sqrt{3}$	0	$\sqrt{2}$	$-\sqrt{2}$	0	0	$-\sqrt{2}$	0
${}^2F_{7/2}(210)(21)$	132	0	-7	3	0	0	2	-3	0	0	1	2
${}^2F_{7/2}(100)(10)$	6	0	1	1	0	0	-1	-1	0	0	1	1
${}^4D_{7/2}$	21	0	0	0	$\sqrt{10}$	0	0	0	$-\sqrt{6}$	0	0	0

TABLE 6. $M=7/2$ —Continued.

	$30-1$	$\bar{3}2-1$	$\bar{3}2-2$	$\bar{3}\bar{2}0$	$\bar{3}\bar{2}-1$	$\bar{3}10$	$\bar{3}1-1$	$\bar{3}10$	$\bar{2}\bar{2}0$	$\bar{2}\bar{2}-1$	$\bar{2}10$	$21-1$	$\bar{2}10$	$\bar{2}11$	$\bar{2}10$
${}^2L_{17/2}$	0	$-4\sqrt{15}$	$-4\sqrt{6}$	0	$\sqrt{15}$	$-15\sqrt{2}$	$-5\sqrt{6}$	$10\sqrt{2}$	$4\sqrt{30}$	$9\sqrt{10}$	$-10\sqrt{3}$	0	$20\sqrt{3}$	-15	$-10\sqrt{3}$
${}^2L_{15/2}$	0	$-24\sqrt{2}$	$4\sqrt{5}$	0	$6\sqrt{2}$	$-12\sqrt{15}$	$5\sqrt{5}$	$8\sqrt{15}$	48	$-15\sqrt{3}$	$5\sqrt{10}$	0	$-10\sqrt{10}$	$-6\sqrt{30}$	$5\sqrt{10}$
${}^2K_{15/2}$	0	$-8\sqrt{2}$	$-12\sqrt{5}$	0	$-10\sqrt{2}$	$4\sqrt{15}$	$-15\sqrt{5}$	$-8\sqrt{15}$	16	$21\sqrt{3}$	$9\sqrt{10}$	0	$-2\sqrt{10}$	$2\sqrt{30}$	$-7\sqrt{10}$
${}^4I_{15/2}$	$-2\sqrt{30}$	-6	$-2\sqrt{10}$	$-2\sqrt{3}$	-6	$-\sqrt{30}$	$-4\sqrt{10}$	$-\sqrt{30}$	0	0	$-2\sqrt{5}$	$-3\sqrt{15}$	$-2\sqrt{5}$	0	$-2\sqrt{5}$
${}^2K_{13/2}$	0	-44	$12\sqrt{10}$	0	-55	$11\sqrt{30}$	$15\sqrt{10}$	$-22\sqrt{30}$	$44\sqrt{2}$	$-21\sqrt{6}$	$-18\sqrt{5}$	0	$4\sqrt{5}$	$11\sqrt{15}$	$14\sqrt{5}$
${}^4I_{13/2}$	$4\sqrt{30}$	-18	$-\sqrt{10}$	$-11\sqrt{3}$	-18	$-3\sqrt{30}$	$-2\sqrt{10}$	$-3\sqrt{30}$	0	0	$-\sqrt{5}$	$6\sqrt{15}$	$-\sqrt{5}$	0	$-\sqrt{5}$
${}^2I_{13/2}$	0	$-12\sqrt{2}$	$-10\sqrt{5}$	0	$6\sqrt{2}$	$-\sqrt{15}$	$-2\sqrt{5}$	$2\sqrt{15}$	-18	0	$4\sqrt{10}$	0	$-11\sqrt{10}$	$3\sqrt{30}$	$7\sqrt{10}$
${}^4I_{11/2}$	-36	$-5\sqrt{30}$	$16\sqrt{3}$	$-33\sqrt{10}$	$-5\sqrt{30}$	-25	$32\sqrt{3}$	-25	0	0	$8\sqrt{6}$	$-27\sqrt{2}$	$8\sqrt{6}$	0	$8\sqrt{6}$
${}^2I_{11/2}$	0	$-8\sqrt{15}$	$5\sqrt{6}$	0	$4\sqrt{15}$	$-5\sqrt{2}$	$\sqrt{6}$	$10\sqrt{2}$	$-6\sqrt{30}$	0	$-4\sqrt{3}$	0	$11\sqrt{3}$	30	$-7\sqrt{3}$
${}^2H_{11/2}(210)(21)$	0	$3\sqrt{30}$	$-20\sqrt{3}$	0	$-6\sqrt{30}$	-16	$-25\sqrt{3}$	6	$-6\sqrt{15}$	$-18\sqrt{5}$	$-11\sqrt{6}$	0	$\sqrt{6}$	$-8\sqrt{2}$	$10\sqrt{6}$
${}^2H_{11/2}(210)(11)$	0	0	$-\sqrt{6}$	0	0	$\sqrt{2}$	$\sqrt{6}$	0	0	0	$-2\sqrt{3}$	0	$\sqrt{3}$	-2	$\sqrt{3}$
${}^4G_{11/2}$	$-\sqrt{6}$	$\sqrt{5}$	$5\sqrt{2}$	0	$\sqrt{5}$	$-\sqrt{6}$	$-\sqrt{2}$	$-\sqrt{6}$	0	0	-6	$-7\sqrt{3}$	-6	0	-6
${}^4I_{9/2}$	$-4\sqrt{2}$	$-6\sqrt{15}$	$3\sqrt{6}$	$33\sqrt{5}$	$-6\sqrt{15}$	$-15\sqrt{2}$	$6\sqrt{6}$	$-15\sqrt{2}$	0	0	$3\sqrt{3}$	-6	$3\sqrt{3}$	0	$3\sqrt{3}$
${}^2H_{9/2}(210)(21)$	0	$-27\sqrt{5}$	$-20\sqrt{2}$	0	$54\sqrt{5}$	$24\sqrt{6}$	$-25\sqrt{2}$	$-9\sqrt{6}$	$27\sqrt{10}$	$-6\sqrt{30}$	-22	0	2	$24\sqrt{3}$	20
${}^2H_{9/2}(210)(11)$	0	0	-2	0	0	$-3\sqrt{3}$	2	0	0	0	$-2\sqrt{2}$	0	$\sqrt{2}$	$3\sqrt{6}$	$\sqrt{2}$
${}^4G_{9/2}$	$-6\sqrt{3}$	$-8\sqrt{10}$	-25	0	$-8\sqrt{10}$	$16\sqrt{3}$	5	$16\sqrt{3}$	0	0	$15\sqrt{2}$	$-21\sqrt{6}$	$15\sqrt{2}$	0	$15\sqrt{2}$
${}^2C_{9/2}(210)(21)$	0	$-\sqrt{5}$	$-5\sqrt{2}$	0	$-3\sqrt{5}$	$2\sqrt{6}$	$10\sqrt{2}$	$3\sqrt{6}$	$\sqrt{10}$	$7\sqrt{30}$	-6	0	-14	$2\sqrt{3}$	20
${}^2C_{9/2}(210)(20)$	0	$-2\sqrt{10}$	8	0	$\sqrt{10}$	$\sqrt{3}$	-16	$-2\sqrt{3}$	$-3\sqrt{5}$	0	$-12\sqrt{2}$	0	0	$-3\sqrt{6}$	$12\sqrt{2}$
${}^4F_{9/2}$	$2\sqrt{3}$	0	-1	0	0	0	1	0	0	0	$-\sqrt{2}$	$-\sqrt{6}$	$-\sqrt{2}$	0	$-\sqrt{2}$
${}^4G_{7/2}$	$-3\sqrt{6}$	$28\sqrt{5}$	$-35\sqrt{2}$	0	$28\sqrt{5}$	$-28\sqrt{6}$	$7\sqrt{2}$	$-28\sqrt{6}$	0	0	42	$-21\sqrt{3}$	42	0	42
${}^2C_{7/2}(210)(21)$	0	$4\sqrt{10}$	-5	0	$12\sqrt{10}$	$-16\sqrt{3}$	10	$-24\sqrt{3}$	$-8\sqrt{5}$	$7\sqrt{15}$	$-3\sqrt{2}$	0	$-7\sqrt{2}$	$-8\sqrt{6}$	$10\sqrt{2}$
${}^2C_{7/2}(210)(20)$	0	$8\sqrt{10}$	4	0	$-4\sqrt{10}$	$-4\sqrt{3}$	-8	$8\sqrt{3}$	$12\sqrt{5}$	0	$-6\sqrt{2}$	0	0	$12\sqrt{6}$	$6\sqrt{2}$
${}^4F_{7/2}$	$\sqrt{6}$	0	$\sqrt{2}$	0	0	0	$-\sqrt{2}$	0	0	0	2	$-\sqrt{3}$	2	0	2
${}^2F_{7/2}(210)(21)$	0	0	-5	0	0	0	2	0	0	$-\sqrt{15}$	$\sqrt{2}$	0	$\sqrt{2}$	0	$-2\sqrt{2}$
${}^2F_{7/2}(100)(10)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4D_{7/2}$	$\sqrt{5}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 7. $M = 5/2$

N^{-2}	$\bar{3}\bar{3}-\bar{3}$	$3\bar{2}-\bar{3}$	$\bar{3}\bar{2}-\bar{2}$	$\bar{3}\bar{2}-3$	$31-\bar{2}$	$31-3$	$3\bar{1}-\bar{1}$	$3\bar{1}-2$	$30-\bar{1}$	$30-2$	$\bar{3}\bar{0}-1$	$\bar{3}\bar{2}-\bar{2}$	$\bar{3}\bar{2}-3$	$\bar{3}\bar{2}-\bar{1}$	$\bar{3}\bar{2}-2$	
${}^3L_{17/2}$	12376	$\sqrt{6}$	-1	$4\sqrt{6}$	6	$-2\sqrt{15}$	0	$5\sqrt{6}$	$5\sqrt{15}$	$-15\sqrt{2}$	0	$20\sqrt{2}$	$-5\sqrt{6}$	-5	0	$\sqrt{6}$
${}^3L_{15/2}$	136136	11	$\sqrt{6}$	44	$-6\sqrt{6}$	$6\sqrt{10}$	0	55	$-15\sqrt{10}$	$30\sqrt{3}$	0	$-40\sqrt{3}$	-55	$5\sqrt{6}$	0	11
${}^2K_{15/2}$	24024	$3\sqrt{5}$	$\sqrt{30}$	$12\sqrt{5}$	$2\sqrt{30}$	$22\sqrt{2}$	0	$15\sqrt{5}$	$5\sqrt{2}$	$14\sqrt{15}$	0	$-8\sqrt{15}$	$-7\sqrt{5}$	$-3\sqrt{30}$	0	$-5\sqrt{5}$
${}^4I_{15/2}$	3003	0	$-\sqrt{15}$	$-2\sqrt{10}$	$-\sqrt{15}$	-15	$-4\sqrt{6}$	$-4\sqrt{10}$	-15	$-2\sqrt{30}$	$-10\sqrt{3}$	$-2\sqrt{30}$	$-2\sqrt{10}$	$-\sqrt{15}$	-6	$-2\sqrt{10}$
${}^2K_{13/2}$	24024	$3\sqrt{10}$	$-\sqrt{15}$	$12\sqrt{10}$	$-2\sqrt{15}$	-22	0	$15\sqrt{10}$	-5	$-7\sqrt{30}$	0	$4\sqrt{30}$	$-7\sqrt{10}$	$3\sqrt{15}$	0	$-5\sqrt{10}$
${}^4I_{13/2}$	429	0	0	$-\sqrt{10}$	0	0	$2\sqrt{6}$	$-2\sqrt{10}$	0	0	$5\sqrt{3}$	0	$-\sqrt{10}$	0	-6	$-\sqrt{10}$
${}^2I_{13/2}$	3003	6	$-\sqrt{6}$	10	$5\sqrt{6}$	$-3\sqrt{10}$	0	2	$6\sqrt{10}$	$-7\sqrt{3}$	0	$8\sqrt{3}$	-14	$-4\sqrt{6}$	0	4
${}^4I_{11/2}$	99099	0	$13\sqrt{2}$	$-6\sqrt{3}$	$13\sqrt{2}$	$13\sqrt{30}$	$-24\sqrt{5}$	$-12\sqrt{3}$	$13\sqrt{30}$	52	$-30\sqrt{10}$	52	$-6\sqrt{3}$	$13\sqrt{2}$	$-27\sqrt{30}$	$-6\sqrt{3}$
${}^2I_{11/2}$	18018	$9\sqrt{6}$	4	$15\sqrt{6}$	-20	$4\sqrt{15}$	0	$3\sqrt{6}$	$-8\sqrt{15}$	$14\sqrt{2}$	0	$-16\sqrt{2}$	$-21\sqrt{6}$	16	0	$6\sqrt{6}$
${}^2H_{11/2}(210)(21)$	45045	$5\sqrt{3}$	$30\sqrt{2}$	$20\sqrt{3}$	$-5\sqrt{2}$	$18\sqrt{30}$	0	$25\sqrt{3}$	$-3\sqrt{30}$	4	0	46	$10\sqrt{3}$	$-25\sqrt{2}$	0	$-30\sqrt{3}$
${}^2H_{11/2}(210)(11)$	198	$\sqrt{6}$	0	$\sqrt{6}$	4	0	0	$-\sqrt{6}$	0	$2\sqrt{2}$	0	$-4\sqrt{2}$	$-\sqrt{6}$	-4	0	0
${}^4G_{11/2}$	1815	0	$5\sqrt{3}$	$5\sqrt{2}$	$5\sqrt{3}$	$4\sqrt{5}$	$3\sqrt{30}$	$-\sqrt{2}$	$4\sqrt{5}$	$-\sqrt{6}$	$2\sqrt{15}$	$-\sqrt{6}$	$5\sqrt{2}$	$5\sqrt{3}$	$\sqrt{5}$	$5\sqrt{2}$
${}^4I_{9/2}$	9438	0	4	$-6\sqrt{6}$	4	$4\sqrt{15}$	$-2\sqrt{10}$	$-12\sqrt{6}$	$4\sqrt{15}$	$8\sqrt{2}$	$-5\sqrt{5}$	$8\sqrt{2}$	$-6\sqrt{6}$	4	$12\sqrt{15}$	$-6\sqrt{6}$
${}^2H_{9/2}(210)(21)$	180180	$-20\sqrt{2}$	$30\sqrt{3}$	$-80\sqrt{2}$	$-5\sqrt{3}$	$54\sqrt{5}$	0	$-100\sqrt{2}$	$-9\sqrt{5}$	$2\sqrt{6}$	0	$23\sqrt{6}$	$-40\sqrt{2}$	$-25\sqrt{3}$	0	$120\sqrt{2}$
${}^2H_{9/2}(210)(11)$	198	-4	0	-4	$\sqrt{6}$	0	0	4	0	$\sqrt{3}$	0	$-2\sqrt{3}$	4	$-\sqrt{6}$	0	0
${}^4G_{9/2}$	52272	0	$-5\sqrt{6}$	-65	$-5\sqrt{6}$	$-4\sqrt{10}$	$27\sqrt{15}$	13	$-4\sqrt{10}$	$2\sqrt{3}$	$9\sqrt{30}$	$2\sqrt{3}$	-65	$-5\sqrt{6}$	$-12\sqrt{10}$	-65
${}^2G_{9/2}(210)(21)$	16380	$-15\sqrt{2}$	$15\sqrt{3}$	$5\sqrt{2}$	$-25\sqrt{3}$	$12\sqrt{5}$	0	$-10\sqrt{2}$	$-17\sqrt{5}$	$-9\sqrt{6}$	0	$-\sqrt{6}$	$10\sqrt{2}$	$10\sqrt{3}$	0	$-15\sqrt{2}$
${}^2G_{9/2}(210)(20)$	4158	$-9\sqrt{2}$	$-5\sqrt{3}$	$-4\sqrt{2}$	$-8\sqrt{3}$	$-4\sqrt{5}$	0	$8\sqrt{2}$	$8\sqrt{5}$	$10\sqrt{6}$	0	$-2\sqrt{6}$	$-\sqrt{2}$	$13\sqrt{3}$	0	$5\sqrt{2}$
${}^4F_{9/2}$	144	0	$-\sqrt{6}$	-1	$-\sqrt{6}$	0	$-\sqrt{15}$	1	0	$2\sqrt{3}$	$\sqrt{30}$	$2\sqrt{3}$	-1	$-\sqrt{6}$	0	-1
${}^4G_{7/2}$	291060	0	$-55\sqrt{3}$	$70\sqrt{2}$	$-55\sqrt{3}$	$-44\sqrt{5}$	$27\sqrt{30}$	$-14\sqrt{2}$	$-44\sqrt{5}$	$11\sqrt{6}$	$18\sqrt{15}$	$11\sqrt{6}$	$70\sqrt{2}$	$-55\sqrt{3}$	$84\sqrt{5}$	$70\sqrt{2}$
${}^2G_{7/2}(210)(21)$	114660	105	$15\sqrt{6}$	-35	$-25\sqrt{6}$	$12\sqrt{10}$	0	70	$-17\sqrt{10}$	$-18\sqrt{3}$	0	$-2\sqrt{3}$	-70	$10\sqrt{6}$	0	105
${}^2G_{7/2}(210)(20)$	29106	63	$-5\sqrt{6}$	28	$-8\sqrt{6}$	$-4\sqrt{10}$	0	-56	$8\sqrt{10}$	$20\sqrt{3}$	0	$-4\sqrt{3}$	7	$13\sqrt{6}$	0	-35
${}^4F_{7/2}$	252	0	$\sqrt{3}$	$2\sqrt{2}$	$\sqrt{3}$	0	$-\sqrt{30}$	$-2\sqrt{2}$	0	$-\sqrt{6}$	$2\sqrt{15}$	$-\sqrt{6}$	$2\sqrt{2}$	$\sqrt{3}$	0	$2\sqrt{2}$
${}^2F_{7/2}(210)(21)$	924	-7	$3\sqrt{6}$	5	$-5\sqrt{6}$	0	0	-2	$3\sqrt{10}$	$-2\sqrt{3}$	0	$-2\sqrt{3}$	-2	$2\sqrt{6}$	0	-3
${}^2F_{7/2}(100)(10)$	42	1	$\sqrt{6}$	0	0	0	0	0	0	0	0	0	1	$-\sqrt{6}$	0	-1
${}^4D_{7/2}$	147	0	$\sqrt{10}$	0	$\sqrt{10}$	$-\sqrt{6}$	4	0	$-\sqrt{6}$	$\sqrt{5}$	$-\sqrt{2}$	$\sqrt{5}$	0	$\sqrt{10}$	0	0
${}^4G_{5/2}$	25872	0	$5\sqrt{6}$	-35	$5\sqrt{6}$	$4\sqrt{10}$	$-3\sqrt{15}$	7	$4\sqrt{10}$	$-2\sqrt{3}$	$-\sqrt{30}$	$-2\sqrt{3}$	-35	$5\sqrt{6}$	$28\sqrt{10}$	-35
${}^4F_{5/2}$	336	0	$-\sqrt{10}$	$\sqrt{15}$	$-\sqrt{10}$	0	3	$-\sqrt{15}$	0	$2\sqrt{5}$	$-3\sqrt{2}$	$2\sqrt{5}$	$\sqrt{15}$	$-\sqrt{10}$	0	$\sqrt{15}$
${}^2F_{5/2}(210)(21)$	924	$-7\sqrt{6}$	-3	$5\sqrt{6}$	5	0	0	$-2\sqrt{6}$	$-\sqrt{15}$	$\sqrt{2}$	0	$\sqrt{2}$	$-2\sqrt{6}$	-2	0	$-3\sqrt{6}$
${}^2F_{5/2}(100)(10)$	42	$\sqrt{6}$	-1	0	0	0	0	0	0	0	0	0	$\sqrt{6}$	1	0	$-\sqrt{6}$
${}^4D_{5/2}$	882	0	$4\sqrt{5}$	0	$4\sqrt{5}$	$-4\sqrt{3}$	$-6\sqrt{2}$	0	$-4\sqrt{3}$	$2\sqrt{10}$	3	$2\sqrt{10}$	0	$4\sqrt{5}$	0	0
${}^2D_{5/2}(210)(21)$	42	0	$4\sqrt{5}$	0	$-2\sqrt{5}$	$-4\sqrt{3}$	0	0	$8\sqrt{3}$	$-\sqrt{10}$	0	$-4\sqrt{10}$	0	$-2\sqrt{5}$	0	0
${}^2D_{5/2}(210)(20)$	6468	0	$-18\sqrt{5}$	0	$9\sqrt{5}$	$18\sqrt{3}$	0	0	$-\sqrt{3}$	$-6\sqrt{10}$	0	$-3\sqrt{10}$	0	$9\sqrt{5}$	0	0

TABLE 7. $M=5/2$ —Continued

	$\bar{3}1-\bar{1}$	$\bar{3}1-2$	$\bar{3}1\bar{0}$	$\bar{3}\bar{1}-1$	$\bar{3}0\bar{0}$	$\bar{3}0-1$	$\bar{2}\bar{2}-\bar{1}$	$\bar{2}\bar{2}-2$	$21-\bar{1}$	$21-2$	$2\bar{1}\bar{0}$	$2\bar{1}-1$	$20\bar{0}$	$20-1$	$\bar{2}1\bar{0}$	$\bar{2}1-1$	$\bar{2}\bar{1}\bar{0}$	$1\bar{1}\bar{0}$
${}^2L_{17/2}$	$-10\sqrt{6}$	$-3\sqrt{15}$	0	$5\sqrt{6}$	$-10\sqrt{6}$	$-5\sqrt{2}$	$9\sqrt{10}$	24	-15	0	$10\sqrt{3}$	45	-40	0	$-20\sqrt{3}$	-30	$10\sqrt{3}$	$5\sqrt{30}$
${}^2L_{15/2}$	-110	$9\sqrt{10}$	0	55	-110	$10\sqrt{3}$	$33\sqrt{15}$	$-24\sqrt{6}$	$15\sqrt{6}$	0	$55\sqrt{2}$	$-45\sqrt{6}$	$40\sqrt{6}$	0	$-110\sqrt{2}$	$30\sqrt{6}$	$55\sqrt{2}$	$-30\sqrt{5}$
${}^2K_{15/2}$	$2\sqrt{5}$	$-27\sqrt{2}$	0	$-17\sqrt{5}$	$18\sqrt{5}$	$-6\sqrt{15}$	$21\sqrt{3}$	$8\sqrt{30}$	$7\sqrt{30}$	0	$7\sqrt{10}$	$3\sqrt{30}$	$8\sqrt{30}$	0	$2\sqrt{10}$	$-10\sqrt{30}$	$-9\sqrt{10}$	10
${}^4I_{15/2}$	$-4\sqrt{10}$	-15	$-\sqrt{30}$	$-4\sqrt{10}$	0	$-2\sqrt{30}$	0	0	$-3\sqrt{15}$	$-6\sqrt{6}$	$-2\sqrt{5}$	$-3\sqrt{15}$	0	$-6\sqrt{5}$	$-2\sqrt{5}$	$-3\sqrt{15}$	$-2\sqrt{5}$	0
${}^2K_{13/2}$	$2\sqrt{10}$	27	0	$-17\sqrt{10}$	$18\sqrt{10}$	$3\sqrt{30}$	$21\sqrt{6}$	$-8\sqrt{15}$	$-7\sqrt{15}$	0	$14\sqrt{5}$	$-3\sqrt{15}$	$-8\sqrt{15}$	0	$4\sqrt{5}$	$10\sqrt{15}$	$-18\sqrt{5}$	$-5\sqrt{2}$
${}^4I_{13/2}$	$-2\sqrt{10}$	0	$-\sqrt{30}$	$-2\sqrt{10}$	0	0	0	0	0	$3\sqrt{6}$	$-\sqrt{5}$	0	0	$3\sqrt{5}$	$-\sqrt{5}$	0	$-\sqrt{5}$	0
${}^2I_{13/2}$	-10	$-3\sqrt{10}$	0	8	-6	$-\sqrt{3}$	0	$6\sqrt{6}$	0	0	$-7\sqrt{2}$	$-3\sqrt{6}$	$6\sqrt{6}$	0	$11\sqrt{2}$	$3\sqrt{6}$	$-4\sqrt{2}$	$-9\sqrt{5}$
${}^4I_{11/2}$	$-12\sqrt{3}$	$13\sqrt{30}$	-135	$-12\sqrt{3}$	0	52	0	0	$39\sqrt{2}$	$-36\sqrt{5}$	$-3\sqrt{6}$	$39\sqrt{2}$	0	$-30\sqrt{6}$	$-3\sqrt{6}$	$39\sqrt{2}$	$-3\sqrt{6}$	0
${}^2I_{11/2}$	$-15\sqrt{6}$	$4\sqrt{15}$	0	$12\sqrt{6}$	$-9\sqrt{6}$	$2\sqrt{2}$	0	-24	0	0	$-21\sqrt{3}$	12	-24	0	$33\sqrt{3}$	-12	$-12\sqrt{3}$	$6\sqrt{30}$
${}^2H_{11/2}(210)(21)$	$-\sqrt{3}$	$-15\sqrt{30}$	0	$-24\sqrt{3}$	$-22\sqrt{3}$	-50	$-18\sqrt{5}$	$-20\sqrt{2}$	$2\sqrt{2}$	0	$-10\sqrt{6}$	$-27\sqrt{2}$	$-46\sqrt{2}$	0	$-\sqrt{6}$	$25\sqrt{2}$	$11\sqrt{6}$	$-6\sqrt{15}$
${}^2H_{11/2}(210)(11)$	$\sqrt{6}$	0	0	0	$\sqrt{6}$	$2\sqrt{2}$	0	4	-4	0	$-\sqrt{3}$	0	-4	0	$-\sqrt{3}$	4	$2\sqrt{3}$	0
${}^4G_{11/2}$	$-\sqrt{2}$	$4\sqrt{5}$	$-\sqrt{6}$	$-\sqrt{2}$	0	$-\sqrt{6}$	0	0	$-7\sqrt{3}$	$-\sqrt{30}$	-6	$-7\sqrt{3}$	0	-16	-6	$-7\sqrt{3}$	-6	0
${}^4I_{9/2}$	$-12\sqrt{6}$	$4\sqrt{15}$	$30\sqrt{2}$	$-12\sqrt{6}$	0	$8\sqrt{2}$	0	0	12	$-3\sqrt{10}$	$-6\sqrt{3}$	12	0	$-5\sqrt{3}$	$-6\sqrt{3}$	12	$-6\sqrt{3}$	0
${}^2H_{9/2}(210)(21)$	$4\sqrt{2}$	$-45\sqrt{5}$	0	$96\sqrt{2}$	$88\sqrt{2}$	$-25\sqrt{6}$	$24\sqrt{30}$	$-20\sqrt{3}$	$2\sqrt{3}$	0	80	$-27\sqrt{3}$	$-46\sqrt{3}$	0	8	$25\sqrt{3}$	-88	$-9\sqrt{10}$
${}^2H_{9/2}(210)(11)$	-4	0	0	0	-4	$\sqrt{3}$	0	$\sqrt{6}$	$-\sqrt{6}$	0	$2\sqrt{2}$	0	$-\sqrt{6}$	0	$2\sqrt{2}$	$\sqrt{6}$	$-4\sqrt{2}$	0
${}^4G_{9/2}$	13	$-4\sqrt{10}$	$24\sqrt{3}$	13	0	$2\sqrt{3}$	0	0	$7\sqrt{6}$	$-9\sqrt{15}$	$39\sqrt{2}$	$7\sqrt{6}$	0	$-72\sqrt{2}$	$39\sqrt{2}$	$7\sqrt{6}$	$39\sqrt{2}$	0
${}^2G_{9/2}(210)(21)$	$7\sqrt{2}$	$5\sqrt{5}$	0	$3\sqrt{2}$	$-6\sqrt{2}$	$10\sqrt{6}$	$7\sqrt{30}$	$30\sqrt{3}$	$-9\sqrt{3}$	0	-20	$14\sqrt{3}$	$2\sqrt{3}$	0	14	$-5\sqrt{3}$	6	$-17\sqrt{10}$
${}^2G_{9/2}(210)(20)$	$-7\sqrt{2}$	$-4\sqrt{5}$	0	$-\sqrt{2}$	$9\sqrt{2}$	$-8\sqrt{6}$	0	$-3\sqrt{3}$	$-11\sqrt{3}$	0	-12	$7\sqrt{3}$	$-3\sqrt{3}$	0	0	$4\sqrt{3}$	12	$-6\sqrt{10}$
${}^4F_{9/2}$	1	0	0	1	0	$2\sqrt{3}$	0	0	$-\sqrt{6}$	$-\sqrt{15}$	$-\sqrt{2}$	$-\sqrt{6}$	0	0	$-\sqrt{2}$	$-\sqrt{6}$	$-\sqrt{2}$	0
${}^4G_{7/2}$	$-14\sqrt{2}$	$-44\sqrt{5}$	$-84\sqrt{6}$	$-14\sqrt{2}$	0	$11\sqrt{6}$	0	0	$77\sqrt{3}$	$-9\sqrt{30}$	-84	$77\sqrt{3}$	0	-144	-84	$77\sqrt{3}$	-84	0
${}^2G_{7/2}(210)(21)$	-49	$5\sqrt{10}$	0	-21	42	$20\sqrt{3}$	$-49\sqrt{15}$	$30\sqrt{6}$	$-9\sqrt{6}$	0	$70\sqrt{2}$	$14\sqrt{6}$	$2\sqrt{6}$	0	$-49\sqrt{2}$	$-5\sqrt{6}$	$-21\sqrt{2}$	$-34\sqrt{5}$
${}^2G_{7/2}(210)(20)$	49	$-4\sqrt{10}$	0	7	-63	$-16\sqrt{3}$	0	$-3\sqrt{6}$	$-11\sqrt{6}$	0	$42\sqrt{2}$	$7\sqrt{6}$	$-3\sqrt{6}$	0	0	$4\sqrt{6}$	$-42\sqrt{2}$	$-12\sqrt{5}$
${}^4F_{7/2}$	$-2\sqrt{2}$	0	0	$-2\sqrt{2}$	0	$-\sqrt{6}$	0	0	$\sqrt{3}$	$-\sqrt{30}$	4	$\sqrt{3}$	0	0	4	$\sqrt{3}$	4	0
${}^2F_{7/2}(210)(21)$	-1	$-3\sqrt{10}$	0	3	2	$4\sqrt{3}$	$-\sqrt{15}$	$2\sqrt{6}$	$-\sqrt{6}$	0	$2\sqrt{2}$	$-2\sqrt{6}$	$2\sqrt{6}$	0	$-\sqrt{2}$	$3\sqrt{6}$	$-\sqrt{2}$	$6\sqrt{5}$
${}^2F_{7/2}(100)(10)$	-1	0	0	1	1	0	0	$-\sqrt{6}$	$-\sqrt{6}$	0	0	$\sqrt{6}$	$\sqrt{6}$	0	0	0	0	0
${}^4D_{7/2}$	0	$-\sqrt{6}$	0	0	0	$\sqrt{5}$	0	0	0	-6	0	0	0	$\sqrt{30}$	0	0	0	0
${}^4G_{5/2}$	7	$4\sqrt{10}$	$-56\sqrt{3}$	7	0	$-2\sqrt{3}$	0	0	$-7\sqrt{6}$	$\sqrt{15}$	$21\sqrt{2}$	$-7\sqrt{6}$	0	$8\sqrt{2}$	$21\sqrt{2}$	$-7\sqrt{6}$	$21\sqrt{2}$	0
${}^4F_{5/2}$	$-\sqrt{15}$	0	0	$-\sqrt{15}$	0	$2\sqrt{5}$	0	0	$-\sqrt{10}$	3	$\sqrt{30}$	$-\sqrt{10}$	0	0	$\sqrt{30}$	$-\sqrt{10}$	$\sqrt{30}$	0
${}^2F_{5/2}(210)(21)$	$-\sqrt{6}$	$\sqrt{15}$	0	$3\sqrt{6}$	$2\sqrt{6}$	$-2\sqrt{2}$	$-3\sqrt{10}$	-2	1	0	$4\sqrt{3}$	2	-2	0	$-2\sqrt{3}$	-3	$-2\sqrt{3}$	$-\sqrt{30}$
${}^2F_{5/2}(100)(10)$	$-\sqrt{6}$	0	0	$\sqrt{6}$	$\sqrt{6}$	0	0	1	1	0	0	-1	-1	0	0	0	0	0
${}^4D_{5/2}$	0	$-4\sqrt{3}$	0	0	0	$2\sqrt{10}$	0	0	0	$9\sqrt{2}$	0	0	0	$-3\sqrt{15}$	0	0	0	0
${}^2D_{5/2}(210)(21)$	0	$-4\sqrt{3}$	0	0	0	$5\sqrt{10}$	0	$-6\sqrt{5}$	$6\sqrt{5}$	0	0	0	$-6\sqrt{5}$	0	0	$-6\sqrt{5}$	0	$-6\sqrt{6}$
${}^2D_{5/2}(210)(20)$	0	$-17\sqrt{3}$	0	0	0	$9\sqrt{10}$	0	$-8\sqrt{5}$	$-6\sqrt{5}$	0	0	$7\sqrt{5}$	$6\sqrt{5}$	0	0	$-\sqrt{5}$	0	$-\sqrt{6}$

TABLE 8. $M=3/2$

	N^{-2}	$3\bar{2}-\bar{3}$	$31-\bar{3}$	$3\bar{1}-\bar{2}$	$3\bar{1}-\bar{3}$	$30-\bar{2}$	$30-3$	$3\bar{0}-\bar{1}$	$3\bar{0}-\bar{2}$	$3-1-\bar{1}$	$3-1-2$	$\bar{3}\bar{2}-\bar{3}$	$\bar{3}\bar{2}-\bar{2}$
${}^2L_{17/2}$	19448	5	$-\sqrt{10}$	$3\sqrt{15}$	$3\sqrt{10}$	$-6\sqrt{5}$	0	$5\sqrt{2}$	$10\sqrt{5}$	$-10\sqrt{6}$	0	-6	0
${}^2L_{15/2}$	136136	$5\sqrt{10}$	7	$15\sqrt{6}$	-21	$21\sqrt{2}$	0	$10\sqrt{5}$	$-35\sqrt{2}$	$14\sqrt{15}$	0	$-6\sqrt{10}$	0
${}^2K_{15/2}$	40040	$3\sqrt{30}$	$9\sqrt{3}$	$27\sqrt{2}$	$5\sqrt{3}$	$19\sqrt{6}$	0	$6\sqrt{15}$	$-5\sqrt{6}$	$22\sqrt{5}$	0	$-2\sqrt{30}$	0
${}^4I_{15/2}$	5005	$-\sqrt{15}$	$-4\sqrt{6}$	-15	$-4\sqrt{6}$	$-10\sqrt{3}$	$-9\sqrt{2}$	$-2\sqrt{30}$	$-10\sqrt{3}$	0	-10	$-\sqrt{15}$	$-2\sqrt{10}$
${}^2K_{13/2}$	120120	$9\sqrt{15}$	$-9\sqrt{6}$	81	$-5\sqrt{6}$	$-38\sqrt{3}$	0	$9\sqrt{30}$	$10\sqrt{3}$	$-22\sqrt{10}$	0	$-6\sqrt{15}$	0
${}^4I_{13/2}$	6435	$-2\sqrt{5}$	$2\sqrt{2}$	$-10\sqrt{3}$	$2\sqrt{2}$	5	$9\sqrt{6}$	$-4\sqrt{10}$	5	0	$10\sqrt{3}$	$-2\sqrt{5}$	$-3\sqrt{30}$
${}^2I_{13/2}$	9009	$4\sqrt{10}$	-8	$5\sqrt{6}$	22	$-13\sqrt{2}$	0	$\sqrt{5}$	$20\sqrt{2}$	$-6\sqrt{15}$	0	$-5\sqrt{10}$	0
${}^4I_{11/2}$	198198	$2\sqrt{2}$	$20\sqrt{5}$	$2\sqrt{30}$	$20\sqrt{5}$	$25\sqrt{10}$	$-27\sqrt{15}$	8	$25\sqrt{10}$	0	$-15\sqrt{30}$	$2\sqrt{2}$	$-72\sqrt{3}$
${}^2I_{11/2}$	35036	32	$4\sqrt{10}$	$8\sqrt{15}$	$-11\sqrt{10}$	$13\sqrt{5}$	0	$4\sqrt{2}$	$-20\sqrt{5}$	$15\sqrt{6}$	0	-40	0
${}^2H_{11/2}(210)(21)$	90090	$25\sqrt{2}$	$42\sqrt{5}$	$15\sqrt{30}$	$-7\sqrt{5}$	$28\sqrt{10}$	0	50	$7\sqrt{10}$	$-21\sqrt{3}$	0	$5\sqrt{2}$	0
${}^2H_{11/2}(210)(11)$	396	4	0	0	$\sqrt{10}$	$\sqrt{5}$	0	$-2\sqrt{2}$	$-2\sqrt{5}$	$3\sqrt{6}$	0	-4	0
${}^4G_{11/2}$	3630	$5\sqrt{3}$	$3\sqrt{30}$	$4\sqrt{5}$	$3\sqrt{30}$	$2\sqrt{15}$	$6\sqrt{10}$	$-\sqrt{6}$	$2\sqrt{15}$	0	$3\sqrt{5}$	$5\sqrt{3}$	$5\sqrt{2}$
${}^2I_{9/2}$	198198	-28	$14\sqrt{10}$	$-28\sqrt{15}$	$14\sqrt{10}$	$35\sqrt{5}$	$-9\sqrt{30}$	$-56\sqrt{2}$	$35\sqrt{5}$	0	$-10\sqrt{15}$	-28	$42\sqrt{6}$
${}^2H_{9/2}(210)(21)$	25740	-25	$12\sqrt{10}$	$-15\sqrt{15}$	$-2\sqrt{10}$	$16\sqrt{5}$	0	$-25\sqrt{2}$	$4\sqrt{5}$	$-6\sqrt{6}$	0	-5	0
${}^2H_{9/2}(210)(11)$	1386	$-7\sqrt{2}$	0	0	$2\sqrt{5}$	$\sqrt{10}$	0	7	$-2\sqrt{10}$	$6\sqrt{3}$	0	$7\sqrt{2}$	0
${}^4G_{9/2}$	121968	$-25\sqrt{6}$	$3\sqrt{15}$	$-20\sqrt{10}$	$3\sqrt{15}$	$\sqrt{30}$	$72\sqrt{5}$	$10\sqrt{3}$	$\sqrt{30}$	0	$18\sqrt{10}$	$-25\sqrt{6}$	-105
${}^2G_{9/2}(210)(21)$	38220	$-10\sqrt{3}$	$9\sqrt{30}$	$-5\sqrt{5}$	$-14\sqrt{30}$	$2\sqrt{15}$	0	$-10\sqrt{6}$	$-12\sqrt{15}$	$-16\sqrt{2}$	0	$25\sqrt{3}$	0
${}^2G_{9/2}(210)(20)$	9702	$-13\sqrt{3}$	$-3\sqrt{30}$	$4\sqrt{5}$	0	$4\sqrt{15}$	0	$8\sqrt{6}$	$4\sqrt{15}$	$24\sqrt{2}$	0	$8\sqrt{3}$	0
${}^4F_{9/2}$	336	$-\sqrt{6}$	$-\sqrt{15}$	0	$-\sqrt{15}$	$\sqrt{30}$	0	$2\sqrt{3}$	$\sqrt{30}$	0	$2\sqrt{10}$	$-\sqrt{6}$	-1
${}^4G_{7/2}$	97020	$5\sqrt{3}$	$-12\sqrt{30}$	$4\sqrt{5}$	$-12\sqrt{30}$	$-8\sqrt{15}$	$36\sqrt{10}$	$-\sqrt{6}$	$-8\sqrt{15}$	0	$18\sqrt{5}$	$5\sqrt{3}$	$105\sqrt{2}$
${}^2G_{7/2}(210)(21)$	38220	$10\sqrt{6}$	$9\sqrt{15}$	$5\sqrt{10}$	$-14\sqrt{15}$	$\sqrt{30}$	0	$20\sqrt{3}$	$-6\sqrt{30}$	-16	0	$-25\sqrt{6}$	0
${}^2G_{7/2}(210)(20)$	9702	$13\sqrt{6}$	$-3\sqrt{15}$	$-4\sqrt{10}$	0	$2\sqrt{30}$	0	$-16\sqrt{3}$	$2\sqrt{30}$	24	0	$-8\sqrt{6}$	0
${}^4F_{7/2}$	84	$\sqrt{3}$	0	0	0	0	0	$-\sqrt{6}$	0	0	$2\sqrt{5}$	$\sqrt{3}$	$\sqrt{2}$
${}^2F_{7/2}(210)(21)$	924	$-2\sqrt{2}$	$3\sqrt{5}$	$\sqrt{30}$	$-2\sqrt{5}$	$-\sqrt{10}$	0	-4	$2\sqrt{10}$	0	0	$5\sqrt{2}$	0
${}^2F_{7/2}(100)(10)$	42	$\sqrt{2}$	$\sqrt{5}$	0	0	0	0	0	0	0	0	0	0
${}^4D_{7/2}$	441	$\sqrt{10}$	4	$-\sqrt{6}$	4	$-\sqrt{2}$	$3\sqrt{3}$	$\sqrt{5}$	$-\sqrt{2}$	0	0	$\sqrt{10}$	0
${}^4G_{5/2}$	25872	$-5\sqrt{30}$	$15\sqrt{3}$	$-20\sqrt{2}$	$15\sqrt{3}$	$5\sqrt{6}$	-24	$2\sqrt{15}$	$5\sqrt{6}$	0	$-\sqrt{6}$	$-\sqrt{10}$	$35\sqrt{5}$
${}^4F_{5/2}$	1680	$\sqrt{10}$	-7	0	-7	$7\sqrt{2}$	0	$-2\sqrt{5}$	$7\sqrt{2}$	0	$-6\sqrt{6}$	$\sqrt{10}$	$3\sqrt{15}$
${}^2F_{5/2}(210)(21)$	924	$-2\sqrt{5}$	$-3\sqrt{2}$	$5\sqrt{3}$	$2\sqrt{2}$	2	0	$-2\sqrt{10}$	-4	0	0	$5\sqrt{5}$	0
${}^2F_{5/2}(100)(10)$	42	0	$\sqrt{5}$	0	0	0	0	0	0	0	0	0	0
${}^4D_{5/2}$	4410	$8\sqrt{5}$	$2\sqrt{2}$	$-8\sqrt{3}$	$2\sqrt{2}$	-1	$-9\sqrt{6}$	$4\sqrt{10}$	0	0	$6\sqrt{3}$	$8\sqrt{5}$	0
${}^2D_{5/2}(210)(21)$	32340	$-9\sqrt{5}$	$-36\sqrt{2}$	$17\sqrt{3}$	$42\sqrt{2}$	48	0	$-9\sqrt{10}$	-36	$-6\sqrt{30}$	0	$-9\sqrt{5}$	0
${}^2D_{5/2}(210)(20)$	4410	$\sqrt{10}$	8	$2\sqrt{6}$	14	$-17\sqrt{2}$	0	$-5\sqrt{5}$	$4\sqrt{2}$	$6\sqrt{15}$	0	$\sqrt{10}$	0
${}^4F_{3/2}$	210	$-\sqrt{5}$	$\sqrt{2}$	0	$\sqrt{2}$	0	0	0	0	0	0	$-\sqrt{5}$	$\sqrt{30}$
${}^4D_{3/2}$	630	$2\sqrt{10}$	-4	$-2\sqrt{6}$	-4	$\sqrt{2}$	$3\sqrt{3}$	$2\sqrt{5}$	$\sqrt{2}$	0	$-\sqrt{6}$	$2\sqrt{10}$	0
${}^2D_{3/2}(210)(21)$	16170	$-9\sqrt{10}$	18	$17\sqrt{6}$	-21	$-12\sqrt{2}$	0	$-18\sqrt{5}$	$9\sqrt{2}$	$3\sqrt{15}$	0	$-9\sqrt{10}$	0
${}^2D_{3/2}(210)(20)$	8820	$4\sqrt{5}$	$-4\sqrt{2}$	$8\sqrt{3}$	$-7\sqrt{2}$	17	0	$-10\sqrt{10}$	-4	$-3\sqrt{30}$	0	$4\sqrt{5}$	0
${}^2P_{3/2}$	84	0	0	0	$\sqrt{6}$	$\sqrt{3}$	0	0	$-2\sqrt{3}$	$-\sqrt{10}$	0	0	0
${}^4S_{3/2}$	7	0	0	0	0	0	-1	0	0	0	$\sqrt{2}$	0	0

TABLE 8. $M=3/2$ - Continued

	$\overline{32-3}$	$\overline{31-2}$	$\overline{31-3}$	$\overline{3\overline{1}-1}$	$\overline{3\overline{1}-2}$	$\overline{30-1}$	$\overline{30-2}$	$\overline{30-1}$	$\overline{2\overline{2}-2}$	$\overline{2\overline{2}-3}$	$\overline{21-2}$	$\overline{21-3}$	$\overline{2\overline{1}-1}$
${}^2L_{17/2}$	1	$-5\sqrt{15}$	$-2\sqrt{10}$	0	$2\sqrt{15}$	$-20\sqrt{2}$	$-4\sqrt{5}$	$15\sqrt{2}$	24	$5\sqrt{6}$	$-3\sqrt{10}$	0	30
${}^2L_{15/2}$	$\frac{\sqrt{10}}{-\sqrt{30}}$	$\frac{-25\sqrt{6}}{-5\sqrt{2}}$	$\frac{14}{-14\sqrt{3}}$	0	$\frac{10\sqrt{6}}{-22\sqrt{2}}$	$\frac{-40\sqrt{5}}{8\sqrt{15}}$	$\frac{14\sqrt{2}}{-14\sqrt{6}}$	$\frac{30\sqrt{5}}{-14\sqrt{15}}$	$\frac{24\sqrt{10}}{8\sqrt{30}}$	$\frac{-7\sqrt{15}}{13\sqrt{5}}$	$\frac{21}{19\sqrt{3}}$	0	$\frac{30\sqrt{10}}{10\sqrt{30}}$
${}^4K_{15/2}$	$\frac{-\sqrt{15}}{-3\sqrt{15}}$	$\frac{-15}{-15}$	$\frac{-4\sqrt{6}}{14\sqrt{6}}$	$\frac{-4\sqrt{10}}{0}$	$\frac{-15}{-66}$	$\frac{-2\sqrt{30}}{12\sqrt{30}}$	$\frac{-10\sqrt{3}}{28\sqrt{3}}$	$\frac{-2\sqrt{30}}{-21\sqrt{30}}$	$\frac{0}{24\sqrt{15}}$	$\frac{0}{-13\sqrt{10}}$	$\frac{-6\sqrt{6}}{-19\sqrt{6}}$	$\frac{-10}{0}$	$\frac{-3\sqrt{15}}{30\sqrt{15}}$
${}^4L_{13/2}$	$\frac{-2\sqrt{5}}{\sqrt{10}}$	$\frac{-10\sqrt{3}}{-10\sqrt{6}}$	$\frac{2\sqrt{2}}{-14}$	$\frac{-6\sqrt{30}}{0}$	$\frac{-10\sqrt{3}}{5\sqrt{6}}$	$\frac{-4\sqrt{10}}{-8\sqrt{5}}$	$\frac{5}{-7\sqrt{2}}$	$\frac{-4\sqrt{10}}{7\sqrt{5}}$	$\frac{0}{6\sqrt{10}}$	$\frac{0}{6\sqrt{15}}$	$\frac{3\sqrt{2}}{-6}$	$\frac{10\sqrt{3}}{0}$	$\frac{-6\sqrt{5}}{-3\sqrt{10}}$
${}^2I_{11/2}$	$\frac{2\sqrt{2}}{8}$	$\frac{2\sqrt{30}}{-16\sqrt{15}}$	$\frac{20\sqrt{5}}{7\sqrt{10}}$	$\frac{-144\sqrt{3}}{0}$	$\frac{2\sqrt{30}}{8\sqrt{15}}$	$\frac{8}{-32\sqrt{2}}$	$\frac{25\sqrt{10}}{7\sqrt{5}}$	$\frac{8}{28\sqrt{2}}$	$\frac{0}{48}$	$\frac{0}{-15\sqrt{6}}$	$\frac{30\sqrt{5}}{3\sqrt{10}}$	$\frac{-15\sqrt{30}}{0}$	$\frac{6\sqrt{2}}{-24}$
${}^2H_{11/2}(210)(21)$	$\frac{-30\sqrt{2}}{0}$	$\frac{3\sqrt{30}}{0}$	$\frac{-35\sqrt{5}}{-\sqrt{10}}$	0	$\frac{-18\sqrt{30}}{0}$	$\frac{-46}{4\sqrt{2}}$	$\frac{-35\sqrt{10}}{\sqrt{5}}$	$\frac{-4}{-2\sqrt{2}}$	$\frac{-20\sqrt{2}}{4}$	$\frac{0}{3\sqrt{6}}$	$\frac{28\sqrt{5}}{-\sqrt{10}}$	$\frac{0}{0}$	$\frac{-25\sqrt{2}}{-4}$
${}^4G_{11/2}$	$\frac{5\sqrt{3}}{-28}$	$\frac{4\sqrt{5}}{-28\sqrt{15}}$	$\frac{3\sqrt{30}}{14\sqrt{10}}$	$\frac{-\sqrt{2}}{84\sqrt{6}}$	$\frac{4\sqrt{5}}{-28\sqrt{15}}$	$\frac{-\sqrt{6}}{-56\sqrt{2}}$	$\frac{2\sqrt{15}}{35\sqrt{5}}$	$\frac{-\sqrt{6}}{-56\sqrt{2}}$	0	0	$\frac{-\sqrt{30}}{21\sqrt{10}}$	$\frac{3\sqrt{5}}{-10\sqrt{15}}$	$\frac{-7\sqrt{3}}{-84}$
${}^2H_{9/2}(210)(21)$	30	$\frac{-3\sqrt{15}}{0}$	$\frac{-10\sqrt{10}}{-2\sqrt{5}}$	0	$\frac{18\sqrt{15}}{0}$	$\frac{23\sqrt{2}}{-14}$	$\frac{-20\sqrt{5}}{\sqrt{10}}$	$\frac{2\sqrt{2}}{7}$	$\frac{20}{-7\sqrt{2}}$	$\frac{0}{6\sqrt{3}}$	$\frac{8\sqrt{10}}{-2\sqrt{5}}$	0	$\frac{25}{7\sqrt{2}}$
${}^4G_{9/2}$	$\frac{-25\sqrt{6}}{-15\sqrt{3}}$	$\frac{-20\sqrt{10}}{17\sqrt{5}}$	$\frac{3\sqrt{15}}{5\sqrt{30}}$	21	$\frac{-20\sqrt{10}}{-12\sqrt{5}}$	$\frac{10\sqrt{3}}{\sqrt{6}}$	$\frac{\sqrt{30}}{10\sqrt{15}}$	$\frac{10\sqrt{3}}{9\sqrt{6}}$	$\frac{0}{30\sqrt{3}}$	$\frac{0}{-5\sqrt{2}}$	$\frac{-\sqrt{15}}{\sqrt{30}}$	$\frac{18\sqrt{10}}{0}$	$\frac{35\sqrt{6}}{5\sqrt{3}}$
${}^2G_{9/2}(210)(20)$	$\frac{5\sqrt{3}}{-\sqrt{6}}$	$\frac{-8\sqrt{5}}{0}$	$\frac{3\sqrt{30}}{-\sqrt{15}}$	1	$\frac{4\sqrt{5}}{0}$	$\frac{2\sqrt{6}}{2\sqrt{3}}$	$\frac{-8\sqrt{15}}{\sqrt{30}}$	$\frac{-10\sqrt{6}}{2\sqrt{3}}$	$\frac{-3\sqrt{3}}{0}$	$\frac{-24\sqrt{2}}{0}$	$\frac{-5\sqrt{30}}{-\sqrt{15}}$	$\frac{0}{-2\sqrt{10}}$	$\frac{-4\sqrt{3}}{-\sqrt{6}}$
${}^4F_{9/2}$	$\frac{5\sqrt{3}}{15\sqrt{6}}$	$\frac{4\sqrt{5}}{-17\sqrt{10}}$	$\frac{-12\sqrt{30}}{5\sqrt{15}}$	$\frac{-21\sqrt{2}}{0}$	$\frac{4\sqrt{5}}{12\sqrt{10}}$	$\frac{-\sqrt{6}}{-2\sqrt{3}}$	$\frac{-8\sqrt{15}}{5\sqrt{30}}$	$\frac{-\sqrt{6}}{-18\sqrt{3}}$	$\frac{0}{-30\sqrt{6}}$	0	$\frac{4\sqrt{30}}{\sqrt{15}}$	$\frac{18\sqrt{5}}{0}$	$\frac{-7\sqrt{3}}{-5\sqrt{6}}$
${}^2G_{7/2}(210)(20)$	$\frac{-5\sqrt{6}}{\sqrt{3}}$	$\frac{8\sqrt{10}}{0}$	$\frac{3\sqrt{15}}{0}$	$\frac{-\sqrt{2}}{-2}$	$\frac{-4\sqrt{10}}{0}$	$\frac{-4\sqrt{3}}{-\sqrt{6}}$	$\frac{-4\sqrt{30}}{0}$	$\frac{20\sqrt{3}}{-\sqrt{6}}$	$\frac{3\sqrt{6}}{0}$	$\frac{-24}{0}$	$\frac{-5\sqrt{15}}{0}$	$\frac{0}{-2\sqrt{5}}$	$\frac{4\sqrt{6}}{\sqrt{3}}$
${}^4F_{7/2}$	$\frac{-3\sqrt{2}}{-\sqrt{2}}$	$\frac{-\sqrt{30}}{-2}$	$\frac{-\sqrt{5}}{-\sqrt{5}}$	0	0	2	$\frac{-\sqrt{10}}{0}$	2	$\frac{2\sqrt{2}}{-\sqrt{2}}$	$\frac{-5\sqrt{3}}{0}$	$\frac{-\sqrt{5}}{-\sqrt{5}}$	0	$\frac{-3\sqrt{2}}{0}$
${}^2F_{7/2}(210)(21)$	$\frac{\sqrt{10}}{-5\sqrt{30}}$	$\frac{-\sqrt{6}}{-20\sqrt{2}}$	$\frac{4}{15\sqrt{3}}$	0	$\frac{-\sqrt{6}}{-20\sqrt{2}}$	$\frac{\sqrt{5}}{2\sqrt{15}}$	$\frac{-\sqrt{2}}{5\sqrt{6}}$	$\frac{\sqrt{5}}{2\sqrt{15}}$	0	0	$\frac{-6}{-5\sqrt{3}}$	$\frac{-\sqrt{6}}{-6\sqrt{2}}$	$\frac{0}{7\sqrt{30}}$
${}^2F_{7/2}(100)(10)$	$\frac{\sqrt{10}}{-3\sqrt{5}}$	$\frac{0}{-5\sqrt{3}}$	$\frac{-7}{\sqrt{2}}$	$\frac{-3\sqrt{15}}{0}$	0	$\frac{-2\sqrt{5}}{\sqrt{10}}$	$\frac{7\sqrt{2}}{2}$	$\frac{-2\sqrt{5}}{\sqrt{10}}$	$\frac{0}{2\sqrt{5}}$	$\frac{0}{\sqrt{30}}$	$\frac{-7}{\sqrt{2}}$	$\frac{6\sqrt{6}}{0}$	$\frac{\sqrt{10}}{-3\sqrt{5}}$
${}^2F_{5/2}(100)(10)$	$\frac{-\sqrt{5}}{8\sqrt{5}}$	$\frac{0}{-8\sqrt{3}}$	$\frac{\sqrt{2}}{2\sqrt{2}}$	0	$\frac{0}{-8\sqrt{3}}$	$\frac{0}{4\sqrt{10}}$	0	$\frac{0}{4\sqrt{10}}$	$\frac{-\sqrt{5}}{0}$	$\frac{0}{0}$	$\frac{\sqrt{2}}{-3\sqrt{2}}$	$\frac{0}{6\sqrt{3}}$	$\frac{0}{0}$
${}^2D_{5/2}(210)(21)$	$\frac{18\sqrt{5}}{-2\sqrt{10}}$	$\frac{\sqrt{3}}{-4\sqrt{6}}$	$\frac{-6\sqrt{2}}{-22}$	0	$\frac{-18\sqrt{3}}{2\sqrt{6}}$	$\frac{3\sqrt{10}}{4\sqrt{5}}$	$\frac{-12}{13\sqrt{2}}$	$\frac{6\sqrt{10}}{\sqrt{5}}$	$\frac{-8\sqrt{5}}{-3\sqrt{10}}$	$\frac{-8\sqrt{30}}{-6\sqrt{15}}$	$\frac{24\sqrt{2}}{18}$	0	$\frac{\sqrt{5}}{3\sqrt{10}}$
${}^2D_{5/2}(210)(20)$	$\frac{-\sqrt{5}}{2\sqrt{10}}$	$\frac{0}{-2\sqrt{6}}$	$\frac{\sqrt{2}}{-4}$	$\frac{-\sqrt{30}}{0}$	$\frac{0}{-2\sqrt{6}}$	$\frac{\sqrt{10}}{2\sqrt{5}}$	$\frac{-2}{\sqrt{2}}$	$\frac{\sqrt{10}}{2\sqrt{5}}$	$\frac{0}{0}$	$\frac{0}{0}$	$\frac{\sqrt{2}}{6}$	$\frac{-\sqrt{3}}{-\sqrt{6}}$	$\frac{-\sqrt{5}}{0}$
${}^2D_{3/2}(210)(21)$	$\frac{18\sqrt{10}}{-8\sqrt{5}}$	$\frac{\sqrt{6}}{-16\sqrt{3}}$	$\frac{3}{11\sqrt{2}}$	0	$\frac{-18\sqrt{6}}{8\sqrt{3}}$	$\frac{6\sqrt{5}}{8\sqrt{10}}$	$\frac{3\sqrt{2}}{-13}$	$\frac{12\sqrt{5}}{+2\sqrt{10}}$	$\frac{-8\sqrt{10}}{-12\sqrt{5}}$	$\frac{4\sqrt{15}}{3\sqrt{30}}$	$\frac{-12}{-9\sqrt{2}}$	0	$\frac{\sqrt{10}}{12\sqrt{5}}$
${}^2D_{3/2}(210)(20)$	0	0	$\frac{-\sqrt{6}}{0}$	0	0	0	$\frac{\sqrt{3}}{0}$	0	0	$\frac{-\sqrt{10}}{0}$	$\frac{-\sqrt{6}}{0}$	$\frac{0}{\sqrt{2}}$	0
${}^2P_{3/2}$	0	0	$\frac{-\sqrt{6}}{0}$	0	0	0	$\frac{\sqrt{3}}{0}$	0	0	$\frac{-\sqrt{10}}{0}$	$\frac{-\sqrt{6}}{0}$	$\frac{0}{\sqrt{2}}$	0
${}^4S_{3/2}$	0	0	$\frac{-\sqrt{6}}{0}$	0	0	0	$\frac{\sqrt{3}}{0}$	0	0	$\frac{-\sqrt{10}}{0}$	$\frac{-\sqrt{6}}{0}$	$\frac{0}{\sqrt{2}}$	0

TABLE 8. $M = 3/2$ - Continued

	$2\bar{1}-2$	$20-\bar{1}$	$20-2$	$2\bar{0}-1$	$\bar{2}1-\bar{1}$	$\bar{2}1-2$	$\bar{2}1\bar{0}$	$\bar{2}\bar{1}-1$	$\bar{2}0\bar{0}$	$\bar{2}0-1$	$\bar{1}\bar{1}\bar{0}$	$\bar{1}\bar{1}-1$	$10\bar{0}$	$10-1$
${}^2L_{17/2}$	$12\sqrt{10}$	$-20\sqrt{3}$	0	$30\sqrt{3}$	-45	$-9\sqrt{10}$	0	15	-40	$-10\sqrt{3}$	$5\sqrt{30}$	$15\sqrt{10}$	$-10\sqrt{10}$	0
${}^2L_{15/2}$	-84	$14\sqrt{30}$	0	$-21\sqrt{30}$	$-45\sqrt{10}$	63	0	$15\sqrt{10}$	$-40\sqrt{10}$	$7\sqrt{30}$	$50\sqrt{3}$	-105	70	0
${}^2K_{15/2}$	$20\sqrt{3}$	$22\sqrt{10}$	0	$-9\sqrt{10}$	$-3\sqrt{30}$	$-39\sqrt{3}$	0	$-7\sqrt{30}$	$8\sqrt{30}$	$-13\sqrt{10}$	10	$25\sqrt{3}$	$10\sqrt{3}$	0
${}^4I_{15/2}$	$-6\sqrt{6}$	$-6\sqrt{5}$	$-16\sqrt{2}$	$-6\sqrt{5}$	$-3\sqrt{15}$	$-6\sqrt{6}$	$-2\sqrt{5}$	$-3\sqrt{15}$	0	$-6\sqrt{5}$	0	0	0	$-5\sqrt{2}$
${}^2K_{13/2}$	$-20\sqrt{6}$	$-44\sqrt{5}$	0	$18\sqrt{5}$	$-9\sqrt{15}$	$39\sqrt{6}$	0	$-21\sqrt{15}$	$24\sqrt{15}$	$26\sqrt{5}$	$15\sqrt{2}$	$-25\sqrt{6}$	$-10\sqrt{6}$	0
${}^4I_{13/2}$	$3\sqrt{2}$	$\sqrt{15}$	$16\sqrt{6}$	$\sqrt{15}$	$-6\sqrt{5}$	$3\sqrt{2}$	$-3\sqrt{15}$	$-6\sqrt{5}$	0	$\sqrt{15}$	0	0	0	$5\sqrt{6}$
${}^2I_{13/2}$	18	$\sqrt{30}$	0	$-2\sqrt{30}$	$3\sqrt{10}$	-12	0	0	$6\sqrt{10}$	$\sqrt{30}$	$-15\sqrt{3}$	-30	30	0
${}^4I_{11/2}$	$30\sqrt{5}$	$25\sqrt{6}$	$-48\sqrt{15}$	$25\sqrt{6}$	$6\sqrt{2}$	$30\sqrt{5}$	$-36\sqrt{6}$	$6\sqrt{2}$	0	$25\sqrt{6}$	0	0	0	$-15\sqrt{15}$
${}^2I_{11/2}$	$-9\sqrt{10}$	$-5\sqrt{3}$	0	$10\sqrt{3}$	$6\sqrt{10}$	$6\sqrt{10}$	0	48	0	$-5\sqrt{3}$	$-12\sqrt{30}$	$15\sqrt{10}$	$-15\sqrt{10}$	0
${}^2H_{11/2}(210)(21)$	$-28\sqrt{5}$	$-21\sqrt{6}$	0	$21\sqrt{6}$	$27\sqrt{2}$	0	0	$-2\sqrt{2}$	$-46\sqrt{2}$	0	$-6\sqrt{15}$	$-35\sqrt{5}$	$-14\sqrt{5}$	0
${}^2H_{11/2}(210)(11)$	$\sqrt{10}$	$-3\sqrt{3}$	0	0	0	0	0	4	-4	$3\sqrt{3}$	0	$-10\sqrt{10}$	$-10\sqrt{10}$	0
${}^4G_{11/2}$	$-3\sqrt{10}$	-16	$-4\sqrt{10}$	-16	$-7\sqrt{3}$	$-3\sqrt{10}$	-6	$-7\sqrt{3}$	0	-16	0	0	0	$-4\sqrt{10}$
${}^4I_{9/2}$	$21\sqrt{10}$	$35\sqrt{3}$	$-16\sqrt{30}$	$35\sqrt{3}$	-84	$21\sqrt{10}$	$42\sqrt{3}$	-84	0	$35\sqrt{3}$	0	0	0	$-5\sqrt{30}$
${}^2H_{9/2}(210)(21)$	$-8\sqrt{10}$	$-12\sqrt{3}$	0	$12\sqrt{3}$	-27	0	0	2	46	0	$3\sqrt{30}$	$-10\sqrt{10}$	$-4\sqrt{10}$	0
${}^2H_{9/2}(210)(11)$	$2\sqrt{5}$	$-3\sqrt{6}$	0	0	0	0	0	$-7\sqrt{2}$	$7\sqrt{2}$	$3\sqrt{6}$	0	$-2\sqrt{5}$	$-2\sqrt{5}$	0
${}^4G_{9/2}$	$-3\sqrt{15}$	$-8\sqrt{2}$	$-48\sqrt{5}$	$-8\sqrt{2}$	$35\sqrt{6}$	$-15\sqrt{15}$	$63\sqrt{2}$	$35\sqrt{6}$	0	$-8\sqrt{2}$	0	0	0	$-48\sqrt{5}$
${}^2G_{9/2}(210)(21)$	$9\sqrt{30}$	-32	0	22	$-14\sqrt{3}$	$-10\sqrt{30}$	0	$2\sqrt{3}$	$9\sqrt{3}$	$-17\sqrt{10}$	$-5\sqrt{30}$	$12\sqrt{30}$	$12\sqrt{30}$	0
${}^2G_{9/2}(210)(20)$	$4\sqrt{30}$	-8	0	16	$-7\sqrt{3}$	$\sqrt{30}$	0	$11\sqrt{3}$	$-3\sqrt{3}$	-8	$-6\sqrt{10}$	$-3\sqrt{30}$	$3\sqrt{30}$	0
${}^4F_{9/2}$	$-3\sqrt{15}$	0	0	0	$-6\sqrt{3}$	$-6\sqrt{15}$	$-2\sqrt{2}$	$-6\sqrt{3}$	0	0	0	0	0	0
${}^4G_{7/2}$	$4\sqrt{30}$	64	$-24\sqrt{10}$	64	$-7\sqrt{3}$	$4\sqrt{30}$	-126	$-7\sqrt{3}$	0	64	0	0	0	$-24\sqrt{10}$
${}^2G_{7/2}(210)(21)$	$9\sqrt{15}$	$-16\sqrt{2}$	0	$11\sqrt{2}$	$14\sqrt{6}$	$-10\sqrt{15}$	0	$-9\sqrt{6}$	$-2\sqrt{6}$	$5\sqrt{2}$	$34\sqrt{5}$	$-5\sqrt{15}$	$12\sqrt{15}$	0
${}^2G_{7/2}(210)(20)$	$4\sqrt{15}$	$-4\sqrt{2}$	0	$8\sqrt{2}$	$7\sqrt{6}$	$\sqrt{15}$	0	$-11\sqrt{6}$	$3\sqrt{6}$	$-4\sqrt{2}$	$12\sqrt{5}$	$-3\sqrt{15}$	$3\sqrt{15}$	0
${}^4F_{7/2}$	0	0	0	0	$\sqrt{3}$	0	2	$\sqrt{3}$	0	0	0	0	0	0
${}^2F_{7/2}(210)(21)$	$3\sqrt{5}$	0	0	$-5\sqrt{6}$	$2\sqrt{2}$	$-2\sqrt{5}$	0	$\sqrt{2}$	$-2\sqrt{2}$	$5\sqrt{6}$	$2\sqrt{15}$	$\sqrt{5}$	$-4\sqrt{5}$	0
${}^2F_{7/2}(100)(10)$	0	0	0	0	$-\sqrt{2}$	$\sqrt{5}$	0	$\sqrt{2}$	$\sqrt{2}$	0	$\sqrt{5}$	$\sqrt{5}$	$\sqrt{5}$	0
${}^4D_{7/2}$	-6	$\sqrt{30}$	$-2\sqrt{3}$	$\sqrt{30}$	0	-6	0	0	0	$\sqrt{30}$	0	0	0	$5\sqrt{3}$
${}^4G_{5/2}$	$-5\sqrt{3}$	$-8\sqrt{10}$	16	$-8\sqrt{10}$	$7\sqrt{30}$	$-5\sqrt{3}$	$-21\sqrt{10}$	$7\sqrt{30}$	0	$-8\sqrt{10}$	0	0	0	16
${}^4F_{5/2}$	$-7\sqrt{2}$	0	0	0	$\sqrt{10}$	-7	$3\sqrt{30}$	$\sqrt{10}$	0	0	0	0	0	0
${}^2F_{5/2}(210)(21)$	$-3\sqrt{2}$	0	0	$2\sqrt{15}$	$2\sqrt{5}$	$2\sqrt{2}$	0	$\sqrt{5}$	$2\sqrt{5}$	$-2\sqrt{15}$	$5\sqrt{6}$	$-2\sqrt{2}$	$4\sqrt{2}$	0
${}^2F_{5/2}(100)(10)$	0	0	0	0	$-\sqrt{5}$	$-\sqrt{2}$	0	$\sqrt{5}$	$\sqrt{5}$	0	0	$-\sqrt{2}$	$-\sqrt{2}$	0
${}^4D_{5/2}$	$-3\sqrt{2}$	$\sqrt{15}$	$6\sqrt{6}$	$\sqrt{15}$	0	$-3\sqrt{2}$	0	0	0	$\sqrt{15}$	0	0	0	$-15\sqrt{6}$
${}^2D_{5/2}(210)(21)$	$-8\sqrt{2}$	$-12\sqrt{15}$	0	$-4\sqrt{15}$	$-7\sqrt{5}$	$-16\sqrt{2}$	0	$6\sqrt{5}$	$6\sqrt{5}$	$16\sqrt{15}$	$-\sqrt{6}$	$34\sqrt{2}$	$36\sqrt{2}$	0
${}^2D_{5/2}(210)(20)$	-6	$-3\sqrt{30}$	0	$2\sqrt{30}$	0	-12	0	$-3\sqrt{10}$	$-3\sqrt{10}$	$-3\sqrt{30}$	$-6\sqrt{3}$	-6	6	0
${}^4F_{3/2}$	$\sqrt{2}$	0	0	0	$-\sqrt{5}$	$\sqrt{2}$	$2\sqrt{15}$	$-\sqrt{5}$	0	0	0	0	0	0
${}^4D_{3/2}$	6	$-3\sqrt{30}$	$-2\sqrt{3}$	$-3\sqrt{30}$	0	6	0	0	0	$-3\sqrt{30}$	0	0	0	$5\sqrt{3}$
${}^2D_{3/2}(210)(21)$	4	$3\sqrt{30}$	0	$\sqrt{30}$	$-7\sqrt{10}$	8	0	$6\sqrt{10}$	$6\sqrt{10}$	$-4\sqrt{30}$	$-2\sqrt{3}$	-17	-18	0
${}^2D_{3/2}(210)(20)$	$3\sqrt{2}$	$\sqrt{15}$	0	$-2\sqrt{15}$	0	$6\sqrt{2}$	0	$-12\sqrt{5}$	$-12\sqrt{5}$	$\sqrt{15}$	$-12\sqrt{6}$	$3\sqrt{2}$	$-3\sqrt{2}$	0
${}^2P_{3/2}$	$\sqrt{6}$	$\sqrt{5}$	0	0	0	0	0	0	0	$-\sqrt{5}$	0	$-\sqrt{6}$	$-\sqrt{6}$	0
${}^4S_{3/2}$	0	0	-1	0	0	0	0	0	0	0	0	0	0	1

TABLE 9. $M = \frac{1}{2}$

	N^{-2}	$3\bar{1}-\bar{3}$	$30-\bar{3}$	$3\bar{0}-\bar{2}$	$3\bar{0}-\bar{3}$	$3-1-\bar{2}$	$3-1-\bar{3}$	$3-\bar{1}-\bar{2}$	$3\bar{2}-\bar{3}$	$\bar{3}\bar{1}-\bar{3}$	$\bar{3}\bar{1}-\bar{2}$	$\bar{3}\bar{1}-\bar{3}$	$\bar{2}\bar{0}-\bar{2}$	$\bar{3}\bar{0}-\bar{3}$
${}^2L_{17/2}$	4862	$2\sqrt{2}$	$-\sqrt{6}$	4	$2\sqrt{6}$	$-4\sqrt{3}$	0	$5\sqrt{3}$	0	$-3\sqrt{2}$	0	$\sqrt{2}$	-10	$-\sqrt{6}$
${}^2L_{15/2}$	58344	$6\sqrt{3}$	8	$6\sqrt{6}$	-16	$16\sqrt{2}$	0	$-20\sqrt{2}$	0	$-9\sqrt{3}$	0	$3\sqrt{3}$	$-15\sqrt{6}$	8
${}^2K_{15/2}$	51480	$14\sqrt{3}$	24	$14\sqrt{6}$	0	$32\sqrt{2}$	0	$-20\sqrt{2}$	0	$-5\sqrt{3}$	0	$-9\sqrt{3}$	$5\sqrt{6}$	-24
${}^4I_{15/2}$	6435	$-4\sqrt{6}$	$-9\sqrt{2}$	$-10\sqrt{3}$	$-9\sqrt{2}$	-10	$-4\sqrt{6}$	-10	$-\sqrt{15}$	$-4\sqrt{6}$	-15	$-4\sqrt{6}$	$-10\sqrt{3}$	$-9\sqrt{2}$
${}^4K_{15/2}$	90090	$14\sqrt{6}$	$-21\sqrt{2}$	$28\sqrt{3}$	0	-56	0	35	0	$-5\sqrt{6}$	0	$-10\sqrt{3}$	$-21\sqrt{2}$	0
${}^4I_{13/2}$	25740	$-6\sqrt{6}$	$9\sqrt{2}$	$-15\sqrt{3}$	$9\sqrt{2}$	10	$14\sqrt{6}$	10	$-4\sqrt{15}$	$-6\sqrt{6}$	-60	$-6\sqrt{6}$	$-15\sqrt{3}$	$9\sqrt{2}$
${}^4K_{13/2}$	36036	$14\sqrt{3}$	-21	$7\sqrt{6}$	42	$-28\sqrt{2}$	0	$35\sqrt{2}$	0	$-22\sqrt{3}$	0	$8\sqrt{3}$	$-20\sqrt{6}$	-21
${}^4I_{11/2}$	28314	8	$9\sqrt{3}$	$10\sqrt{2}$	$9\sqrt{3}$	$5\sqrt{6}$	-36	$5\sqrt{6}$	$-6\sqrt{10}$	8	$-5\sqrt{6}$	8	$10\sqrt{2}$	$9\sqrt{3}$
${}^4K_{11/2}$	5148	$7\sqrt{2}$	$3\sqrt{6}$	7	$-6\sqrt{6}$	$8\sqrt{3}$	0	$-10\sqrt{3}$	0	$-11\sqrt{2}$	0	$4\sqrt{2}$	-20	$3\sqrt{6}$
${}^2H_{11/2}(210)(21)$	2574	$5\sqrt{5}$	$4\sqrt{15}$	$5\sqrt{10}$	0	$\sqrt{30}$	0	$\sqrt{30}$	0	$\sqrt{5}$	0	$-6\sqrt{5}$	$-\sqrt{10}$	$-4\sqrt{15}$
${}^2H_{11/2}(210)(11)$	2772	$5\sqrt{2}$	$\sqrt{6}$	-5	0	$8\sqrt{3}$	0	$-10\sqrt{3}$	0	$-5\sqrt{2}$	0	0	10	$-\sqrt{6}$
${}^4C_{11/2}$	5082	$3\sqrt{30}$	$6\sqrt{10}$	$2\sqrt{15}$	$6\sqrt{10}$	$3\sqrt{5}$	$3\sqrt{30}$	$3\sqrt{5}$	$5\sqrt{3}$	$3\sqrt{30}$	$4\sqrt{5}$	$3\sqrt{30}$	$2\sqrt{15}$	$6\sqrt{10}$
${}^4I_{9/2}$	132132	$-14\sqrt{10}$	$9\sqrt{30}$	$-35\sqrt{5}$	$9\sqrt{30}$	$10\sqrt{15}$	$-14\sqrt{10}$	$10\sqrt{15}$	28	$-14\sqrt{10}$	$28\sqrt{15}$	$-14\sqrt{10}$	$-35\sqrt{5}$	$9\sqrt{30}$
${}^2H_{9/2}(210)(21)$	12870	$-5\sqrt{30}$	$10\sqrt{10}$	$-10\sqrt{15}$	0	$5\sqrt{5}$	0	$5\sqrt{5}$	0	$-\sqrt{30}$	0	$6\sqrt{30}$	$2\sqrt{15}$	$-10\sqrt{10}$
${}^2H_{9/2}(210)(11)$	2772	$-2\sqrt{15}$	$\sqrt{5}$	$\sqrt{30}$	0	$4\sqrt{10}$	0	$-5\sqrt{10}$	0	$2\sqrt{15}$	0	0	$-2\sqrt{30}$	$-\sqrt{5}$
${}^4C_{9/2}$	182952	$-21\sqrt{15}$	$24\sqrt{5}$	$-7\sqrt{30}$	$24\sqrt{5}$	$6\sqrt{10}$	$45\sqrt{15}$	$6\sqrt{10}$	$-45\sqrt{6}$	$-21\sqrt{15}$	$-36\sqrt{10}$	$-21\sqrt{15}$	$-7\sqrt{30}$	$24\sqrt{5}$
${}^4C_{9/2}(210)(21)$	57330	$-5\sqrt{30}$	$15\sqrt{10}$	$-10\sqrt{15}$	$-30\sqrt{10}$	$-5\sqrt{5}$	0	$-10\sqrt{5}$	0	$14\sqrt{30}$	0	$12\sqrt{15}$	$-15\sqrt{10}$	$15\sqrt{10}$
${}^2C_{9/2}(210)(20)$	29106	$-6\sqrt{15}$	$-3\sqrt{5}$	$8\sqrt{30}$	$6\sqrt{5}$	$18\sqrt{10}$	0	$-6\sqrt{10}$	0	0	0	$6\sqrt{15}$	$-4\sqrt{30}$	$-3\sqrt{5}$
${}^4F_{9/2}$	504	$-\sqrt{15}$	0	$\sqrt{30}$	0	$2\sqrt{10}$	$\sqrt{15}$	$2\sqrt{10}$	$-\sqrt{6}$	$-\sqrt{15}$	0	$-\sqrt{15}$	$\sqrt{30}$	0
${}^4C_{7/2}$	58212	$-3\sqrt{30}$	$-12\sqrt{10}$	$-2\sqrt{15}$	$-12\sqrt{10}$	$-6\sqrt{5}$	$18\sqrt{30}$	$-6\sqrt{5}$	$45\sqrt{3}$	$-3\sqrt{30}$	$36\sqrt{5}$	$-3\sqrt{30}$	$-2\sqrt{15}$	$-12\sqrt{10}$
${}^2C_{7/2}(210)(21)$	22932	$5\sqrt{15}$	$12\sqrt{5}$	$5\sqrt{30}$	$-24\sqrt{5}$	$-2\sqrt{10}$	0	$-4\sqrt{10}$	0	$-14\sqrt{15}$	0	$9\sqrt{15}$	$-6\sqrt{30}$	$12\sqrt{5}$
${}^2C_{7/2}(210)(20)$	29106	$15\sqrt{3}$	-6	$-20\sqrt{6}$	12	$36\sqrt{2}$	0	$-12\sqrt{2}$	0	0	0	$-15\sqrt{3}$	$10\sqrt{6}$	-6
${}^4F_{7/2}$	252	$\sqrt{6}$	0	$-2\sqrt{3}$	0	2	$2\sqrt{6}$	2	$\sqrt{15}$	$\sqrt{6}$	0	$\sqrt{6}$	$-2\sqrt{3}$	0
${}^2F_{7/2}(210)(21)$	924	$\sqrt{3}$	4	$\sqrt{6}$	0	$-2\sqrt{2}$	0	$4\sqrt{2}$	0	$2\sqrt{3}$	0	$-3\sqrt{3}$	$-2\sqrt{6}$	-4
${}^2F_{7/2}(100)(10)$	42	$\sqrt{3}$	2	0	0	0	0	0	0	0	0	$-\sqrt{3}$	-2	-2
${}^4D_{7/2}$	735	4	$3\sqrt{3}$	$-\sqrt{2}$	$3\sqrt{3}$	$-\sqrt{6}$	4	$-\sqrt{6}$	$\sqrt{10}$	4	$-\sqrt{6}$	4	$-\sqrt{2}$	$3\sqrt{3}$
${}^4C_{5/2}$	12936	$-15\sqrt{3}$	24	$-5\sqrt{6}$	24	$6\sqrt{2}$	$-15\sqrt{3}$	$6\sqrt{2}$	$5\sqrt{30}$	$-15\sqrt{3}$	$20\sqrt{2}$	$-15\sqrt{3}$	$-5\sqrt{6}$	24
${}^4F_{5/2}$	840	$-\sqrt{2}$	0	$\sqrt{2}$	0	$2\sqrt{6}$	-9	$2\sqrt{6}$	$3\sqrt{10}$	-1	0	-1	$\sqrt{2}$	0
${}^2F_{5/2}(210)(21)$	462	$-\sqrt{6}$	$-\sqrt{6}$	2	0	$\sqrt{3}$	0	$-2\sqrt{3}$	0	$2\sqrt{2}$	0	$-3\sqrt{2}$	-4	$\sqrt{6}$
${}^2F_{5/2}(100)(10)$	42	2	$-\sqrt{3}$	0	0	0	0	0	0	0	0	-2	0	$\sqrt{3}$
${}^4D_{5/2}$	8820	$10\sqrt{2}$	$-3\sqrt{6}$	-5	$-3\sqrt{6}$	$2\sqrt{3}$	$-18\sqrt{2}$	$2\sqrt{3}$	$12\sqrt{5}$	$10\sqrt{2}$	$-12\sqrt{3}$	$10\sqrt{2}$	-5	$-3\sqrt{6}$
${}^2D_{5/2}(210)(21)$	16170	$3\sqrt{2}$	$-6\sqrt{6}$	6	$12\sqrt{6}$	$9\sqrt{3}$	0	$-3\sqrt{3}$	0	$-21\sqrt{2}$	0	$18\sqrt{2}$	18	$-6\sqrt{6}$
${}^2D_{5/2}(210)(20)$	8820	22	$-9\sqrt{3}$	$-13\sqrt{2}$	$18\sqrt{3}$	$-2\sqrt{6}$	0	$-11\sqrt{6}$	0	-14	0	-8	$-4\sqrt{2}$	$-9\sqrt{3}$
${}^4F_{3/2}$	70	$-\sqrt{2}$	0	2	0	$-\sqrt{3}$	$\sqrt{2}$	$-\sqrt{3}$	$\sqrt{5}$	$-\sqrt{2}$	0	$-\sqrt{2}$	2	0
${}^4D_{3/2}$	630	0	-3	0	-3	$\sqrt{2}$	$4\sqrt{3}$	$\sqrt{2}$	$2\sqrt{30}$	0	$-6\sqrt{2}$	0	0	-3
${}^2D_{3/2}(210)(21)$	5390	3	$4\sqrt{3}$	$3\sqrt{2}$	$-8\sqrt{3}$	$-3\sqrt{6}$	0	$\sqrt{6}$	0	-21	0	18	$9\sqrt{2}$	$4\sqrt{3}$
${}^2D_{3/2}(210)(20)$	8820	$11\sqrt{6}$	$9\sqrt{2}$	$-13\sqrt{3}$	$-18\sqrt{2}$	4	0	22	0	$-7\sqrt{6}$	0	$-4\sqrt{6}$	$-4\sqrt{3}$	$9\sqrt{2}$
${}^2P_{3/2}$	252	$\sqrt{6}$	$3\sqrt{2}$	$-\sqrt{3}$	0	$-\sqrt{2}$	0	$-\sqrt{2}$	0	$-\sqrt{6}$	0	0	$2\sqrt{3}$	$-3\sqrt{2}$
${}^4S_{3/2}$	21	0	-1	0	-1	$\sqrt{2}$	0	$\sqrt{2}$	0	0	0	0	0	-1
${}^4D_{1/2}$	1260	$-2\sqrt{6}$	$3\sqrt{2}$	$\sqrt{3}$	$3\sqrt{2}$	-2	-2	-2	$4\sqrt{15}$	$-2\sqrt{6}$	-12	$-2\sqrt{6}$	$\sqrt{3}$	$3\sqrt{2}$
${}^4P_{1/2}$	252	$2\sqrt{3}$	-3	$-\sqrt{6}$	0	$2\sqrt{2}$	0	$\sqrt{2}$	0	$-2\sqrt{3}$	0	0	$2\sqrt{6}$	3

TABLE 9. $M = \frac{1}{2}$ - Continued

	$\bar{3}0-\bar{1}$	$\bar{3}0-\bar{2}$	$\bar{3}-\bar{1}-\bar{1}$	$\bar{3}-\bar{1}-\bar{2}$	$\bar{2}\bar{2}-\bar{3}$	$2\bar{1}-\bar{3}$	$2\bar{1}-\bar{2}$	$2\bar{1}-\bar{3}$	$20-\bar{2}$	$20-\bar{3}$	$2\bar{0}-\bar{1}$	$2\bar{0}-\bar{2}$	$2-1-\bar{1}$	$2-1-\bar{2}$
${}^2L_{17/2}$	0	6	$-2\sqrt{30}$	$-\sqrt{3}$	$\sqrt{30}$	$-\sqrt{3}$	$9\sqrt{2}$	$5\sqrt{3}$	$-4\sqrt{6}$	0	$2\sqrt{15}$	$8\sqrt{6}$	$-9\sqrt{5}$	0
${}^2L_{15/2}$	0	$9\sqrt{6}$	$-18\sqrt{5}$	$4\sqrt{2}$	$9\sqrt{5}$	$4\sqrt{2}$	$27\sqrt{3}$	$-20\sqrt{2}$	32	0	$9\sqrt{10}$	-64	$12\sqrt{30}$	0
${}^2K_{15/2}$	0	$-19\sqrt{6}$	$22\sqrt{5}$	$-12\sqrt{2}$	$13\sqrt{5}$	$12\sqrt{2}$	$39\sqrt{3}$	$20\sqrt{2}$	64	0	$13\sqrt{10}$	0	$12\sqrt{30}$	0
${}^4I_{15/2}$	$-2\sqrt{30}$	$-10\sqrt{3}$	0	-10	0	-10	$-6\sqrt{6}$	-10	$-16\sqrt{2}$	$-10\sqrt{3}$	$-6\sqrt{5}$	$-16\sqrt{2}$	0	$-6\sqrt{6}$
${}^2K_{13/2}$	0	$-38\sqrt{3}$	$22\sqrt{10}$	21	$13\sqrt{10}$	-21	$39\sqrt{6}$	-35	$-56\sqrt{2}$	0	$26\sqrt{5}$	$-21\sqrt{15}$	0	0
${}^4I_{13/2}$	$-8\sqrt{30}$	$-15\sqrt{3}$	0	$\frac{10}{-7\sqrt{2}}$	0	$\frac{10}{-7\sqrt{2}}$	$\frac{-9\sqrt{6}}{12\sqrt{3}}$	$\frac{10}{35\sqrt{2}}$	$\frac{16\sqrt{2}}{-14}$	$\frac{35\sqrt{3}}{0}$	$\frac{-9\sqrt{5}}{-3\sqrt{10}}$	$\frac{16\sqrt{2}}{28}$	0	$\frac{21\sqrt{6}}{0}$
${}^2I_{11/2}$	$-24\sqrt{5}$	$\frac{10\sqrt{2}}{13}$	0	$\frac{5\sqrt{6}}{2\sqrt{3}}$	0	$\frac{5\sqrt{6}}{2\sqrt{3}}$	$\frac{12}{6\sqrt{2}}$	$\frac{5\sqrt{6}}{-10\sqrt{3}}$	$\frac{16\sqrt{3}}{2\sqrt{6}}$	$\frac{-45\sqrt{2}}{0}$	$\frac{2\sqrt{30}}{-\sqrt{15}}$	$\frac{16\sqrt{3}}{-4\sqrt{6}}$	0	-54
${}^2I_{11/2}$	0	0	$-3\sqrt{30}$	$\frac{2\sqrt{3}}{2\sqrt{3}}$	$\frac{3\sqrt{30}}{3\sqrt{30}}$	0	0	0	0	0	0	0	0	0
${}^2H_{11/2}(210)(21)$	0	$-4\sqrt{10}$	$\frac{-3\sqrt{3}}{3\sqrt{30}}$	$\frac{-2\sqrt{30}}{2\sqrt{3}}$	0	$\frac{2\sqrt{30}}{-2\sqrt{3}}$	0	$\frac{-\sqrt{30}}{10\sqrt{3}}$	$\frac{2\sqrt{15}}{-4\sqrt{6}}$	0	0	0	$-9\sqrt{2}$	0
${}^2H_{11/2}(210)(11)$	0	-5	0	0	0	0	0	0	0	0	0	0	0	0
${}^4G_{9/2}$	$-\frac{6\sqrt{6}}{56\sqrt{2}}$	$\frac{2\sqrt{15}}{-35\sqrt{5}}$	0	$\frac{3\sqrt{5}}{10\sqrt{15}}$	0	$\frac{3\sqrt{5}}{10\sqrt{15}}$	$\frac{-\sqrt{30}}{-21\sqrt{10}}$	$\frac{3\sqrt{5}}{10\sqrt{15}}$	$\frac{-4\sqrt{10}}{16\sqrt{30}}$	$\frac{2\sqrt{15}}{-35\sqrt{5}}$	-16	$\frac{-4\sqrt{10}}{16\sqrt{30}}$	0	$\frac{-\sqrt{30}}{-21\sqrt{10}}$
${}^2I_{9/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2H_{9/2}(210)(21)$	0	$8\sqrt{15}$	$9\sqrt{2}$	$-10\sqrt{5}$	0	$10\sqrt{5}$	0	$-5\sqrt{5}$	$5\sqrt{10}$	0	0	0	$-15\sqrt{3}$	0
${}^2H_{9/2}(210)(11)$	0	$\sqrt{30}$	-18	$\sqrt{10}$	-18	$-\sqrt{10}$	0	$5\sqrt{10}$	$-4\sqrt{5}$	0	$9\sqrt{2}$	0	0	0
${}^4G_{9/2}$	$18\sqrt{3}$	$-7\sqrt{30}$	0	$\frac{6\sqrt{10}}{15\sqrt{5}}$	0	$\frac{6\sqrt{10}}{15\sqrt{5}}$	$\frac{7\sqrt{15}}{10\sqrt{30}}$	$\frac{6\sqrt{10}}{-10\sqrt{5}}$	$\frac{-16\sqrt{5}}{-5\sqrt{10}}$	$\frac{15\sqrt{30}}{0}$	$\frac{56\sqrt{2}}{-10}$	$\frac{-16\sqrt{5}}{10\sqrt{10}}$	0	$\frac{-15\sqrt{15}}{-35\sqrt{3}}$
${}^2G_{9/2}(210)(21)$	0	0	$-16\sqrt{2}$	0	$-5\sqrt{2}$	0	0	0	0	0	0	0	0	0
${}^2G_{9/2}(210)(20)$	0	$-4\sqrt{30}$	48	$\frac{-12\sqrt{10}}{2\sqrt{10}}$	-48	$\frac{-12\sqrt{10}}{-2\sqrt{10}}$	$\frac{-2\sqrt{15}}{-\sqrt{15}}$	$\frac{-6\sqrt{10}}{-2\sqrt{10}}$	$\frac{-13\sqrt{5}}{0}$	$\frac{0}{-\sqrt{30}}$	$\frac{8\sqrt{2}}{0}$	$\frac{26\sqrt{5}}{0}$	0	$\frac{0}{\sqrt{15}}$
${}^4F_{9/2}$	$\frac{0}{2\sqrt{3}}$	$\frac{0}{\sqrt{30}}$	0	0	0	0	0	0	0	0	0	0	0	0
${}^4G_{7/2}$	$-9\sqrt{6}$	$-2\sqrt{15}$	0	$\frac{-6\sqrt{5}}{6\sqrt{10}}$	0	$\frac{-6\sqrt{5}}{6\sqrt{10}}$	$\frac{\sqrt{30}}{-10\sqrt{15}}$	$\frac{-6\sqrt{5}}{-4\sqrt{10}}$	$\frac{8\sqrt{10}}{-4\sqrt{5}}$	$\frac{12\sqrt{15}}{0}$	$\frac{16}{5\sqrt{2}}$	$\frac{8\sqrt{10}}{8\sqrt{5}}$	0	$\frac{-6\sqrt{30}}{-14\sqrt{6}}$
${}^2G_{7/2}(210)(21)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4G_{7/2}(210)(20)$	0	$\frac{10\sqrt{6}}{-\sqrt{30}}$	$\frac{-24\sqrt{5}}{-2\sqrt{3}}$	$\frac{-24\sqrt{2}}{2}$	$\frac{24\sqrt{5}}{-2}$	$\frac{-24\sqrt{2}}{-2}$	$\frac{5\sqrt{3}}{\sqrt{6}}$	$\frac{-12\sqrt{2}}{-2}$	-26	0	$\frac{-4\sqrt{10}}{-4\sqrt{3}}$	52	0	$\frac{0}{2\sqrt{6}}$
${}^4F_{7/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2F_{7/2}(210)(21)$	0	$\sqrt{6}$	0	$-2\sqrt{2}$	$-3\sqrt{5}$	$2\sqrt{2}$	$\frac{2\sqrt{3}}{-\sqrt{3}}$	$-4\sqrt{2}$	-4	0	$\frac{-3\sqrt{10}}{0}$	0	$2\sqrt{30}$	0
${}^2F_{7/2}(100)(10)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4D_{5/2}$	$\frac{\sqrt{5}}{-2\sqrt{15}}$	$\frac{-\sqrt{2}}{-5\sqrt{6}}$	0	$\frac{-\sqrt{6}}{6\sqrt{2}}$	0	$\frac{-\sqrt{6}}{6\sqrt{2}}$	$\frac{-6}{5\sqrt{3}}$	$\frac{-\sqrt{6}}{6\sqrt{2}}$	$\frac{-2\sqrt{3}}{-16}$	$\frac{-\sqrt{2}}{-5\sqrt{6}}$	$\frac{\sqrt{30}}{8\sqrt{10}}$	$\frac{-2\sqrt{3}}{-16}$	0	$\frac{-6}{5\sqrt{3}}$
${}^4G_{5/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4F_{5/2}$	$-6\sqrt{5}$	$\sqrt{2}$	0	$\frac{2\sqrt{6}}{\sqrt{3}}$	0	$\frac{-2\sqrt{6}}{-\sqrt{3}}$	$\frac{-1}{2\sqrt{2}}$	$\frac{-2\sqrt{6}}{2\sqrt{3}}$	0	$\frac{9\sqrt{2}}{\sqrt{6}}$	$\frac{0}{-2\sqrt{15}}$	0	$\frac{0}{-3\sqrt{5}}$	-9
${}^2F_{5/2}(210)(21)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2F_{5/2}(100)(10)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4D_{3/2}$	$\frac{\sqrt{5}}{-2\sqrt{15}}$	$\frac{-\sqrt{2}}{-5\sqrt{6}}$	0	$\frac{-\sqrt{6}}{6\sqrt{2}}$	0	$\frac{-\sqrt{6}}{6\sqrt{2}}$	$\frac{-6}{5\sqrt{3}}$	$\frac{-\sqrt{6}}{6\sqrt{2}}$	$\frac{-2\sqrt{3}}{-16}$	$\frac{-\sqrt{2}}{-5\sqrt{6}}$	$\frac{\sqrt{30}}{8\sqrt{10}}$	$\frac{-2\sqrt{3}}{-16}$	0	$\frac{-6}{5\sqrt{3}}$
${}^4G_{3/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^4F_{3/2}$	$-6\sqrt{5}$	$\sqrt{2}$	0	$\frac{2\sqrt{6}}{\sqrt{3}}$	0	$\frac{-2\sqrt{6}}{-\sqrt{3}}$	$\frac{-1}{2\sqrt{2}}$	$\frac{-2\sqrt{6}}{2\sqrt{3}}$	0	$\frac{9\sqrt{2}}{\sqrt{6}}$	$\frac{0}{-2\sqrt{15}}$	0	$\frac{0}{-3\sqrt{5}}$	-9
${}^2F_{3/2}(100)(10)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2D_{5/2}$	$\frac{0}{6\sqrt{10}}$	$\frac{0}{-5}$	0	$\frac{0}{2\sqrt{3}}$	0	$\frac{0}{2\sqrt{3}}$	$\frac{-2}{-15\sqrt{2}}$	$\frac{0}{2\sqrt{3}}$	$\frac{\sqrt{3}}{2\sqrt{6}}$	9	$\frac{0}{5\sqrt{15}}$	$\frac{0}{2\sqrt{6}}$	0	$\frac{0}{27\sqrt{2}}$
${}^2D_{5/2}(210)(21)$	0	-24	$\frac{-3\sqrt{30}}{6\sqrt{15}}$	$\frac{-6\sqrt{3}}{13\sqrt{6}}$	$\frac{-4\sqrt{30}}{-6\sqrt{15}}$	$\frac{-6\sqrt{3}}{13\sqrt{6}}$	$\frac{8\sqrt{2}}{12}$	$\frac{-3\sqrt{3}}{-11\sqrt{6}}$	$\frac{9\sqrt{6}}{-4\sqrt{3}}$	0	$\frac{-8\sqrt{15}}{\sqrt{30}}$	$\frac{-18\sqrt{6}}{8\sqrt{3}}$	$\frac{-21\sqrt{5}}{0}$	0
${}^2D_{5/2}(210)(20)$	0	$\frac{17\sqrt{2}}{17\sqrt{2}}$	0	0	0	0	0	0	0	0	0	0	0	0
${}^4F_{3/2}$	$-\frac{\sqrt{10}}{2\sqrt{15}}$	2	0	$\frac{-\sqrt{3}}{\sqrt{2}}$	0	$\frac{\sqrt{3}}{\sqrt{2}}$	$\frac{-\sqrt{2}}{\sqrt{2}}$	$\frac{\sqrt{3}}{\sqrt{2}}$	0	$\frac{-2}{-6}$	0	0	0	$\frac{\sqrt{2}}{-6\sqrt{3}}$
${}^4D_{3/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2D_{3/2}(210)(21)$	0	$\frac{-12\sqrt{2}}{17\sqrt{3}}$	$\frac{-3\sqrt{15}}{9\sqrt{10}}$	$\frac{2\sqrt{6}}{-26}$	$\frac{-4\sqrt{15}}{-9\sqrt{10}}$	$\frac{2\sqrt{6}}{-26}$	$\frac{8}{6\sqrt{6}}$	$\frac{\sqrt{6}}{22}$	$\frac{-6\sqrt{3}}{4\sqrt{2}}$	0	$\frac{-4\sqrt{30}}{3\sqrt{5}}$	$\frac{12\sqrt{3}}{-8\sqrt{2}}$	$\frac{7\sqrt{10}}{0}$	0
${}^2D_{3/2}(210)(20)$	0	0	0	0	0	0	0	0	0	0	0	0	0	0
${}^2P_{3/2}$	0	$-\sqrt{3}$	$-\sqrt{10}$	$\frac{6}{\sqrt{2}}$	$-\sqrt{10}$	$-\frac{6}{\sqrt{2}}$	0	$\frac{2}{\sqrt{2}}$	$\frac{2\sqrt{2}}{-1}$	0	$\frac{\sqrt{5}}{0}$	0	0	0
${}^2S_{3/2}$	0	0	0	0	0	0	0	0	0	0	0	-1	0	0
${}^4D_{1/2}$	$\frac{2\sqrt{30}}{0}$	$\frac{\sqrt{3}}{-\sqrt{6}}$	0	$\frac{-2}{-3\sqrt{2}}$	0	$\frac{-2}{3\sqrt{2}}$	$\frac{3\sqrt{6}}{0}$	$\frac{-2}{-\sqrt{2}}$	$\frac{-2\sqrt{2}}{-2}$	$\frac{\sqrt{3}}{0}$	$\frac{-3\sqrt{5}}{\sqrt{10}}$	$\frac{-2\sqrt{2}}{0}$	0	$\frac{3\sqrt{6}}{0}$
${}^2P_{1/2}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 9. $M = \frac{1}{2}$ - Continued

	$\bar{2}1-\bar{2}$	$\bar{2}1-\bar{3}$	$\bar{2}\bar{1}-\bar{1}$	$\bar{2}\bar{1}-\bar{2}$	$\bar{2}0-\bar{1}$	$\bar{2}0-\bar{2}$	$\bar{2}0-\bar{1}$	$1\bar{1}-\bar{1}$	$1\bar{1}-\bar{2}$	$10-\bar{1}$	$10-\bar{2}$	$1\bar{0}-\bar{1}$	$1\bar{0}\bar{0}$	$1\bar{0}-\bar{1}$
${}^2L_{17/2}$	$-12\sqrt{2}$	$-4\sqrt{3}$	0	$3\sqrt{2}$	$-6\sqrt{15}$	$-4\sqrt{6}$	$4\sqrt{15}$	$15\sqrt{2}$	$9\sqrt{5}$	$-5\sqrt{6}$	0	$10\sqrt{6}$	$-10\sqrt{2}$	$-5\sqrt{6}$
${}^2L_{15/2}$	$-36\sqrt{3}$	$16\sqrt{2}$	0	$9\sqrt{3}$	$-27\sqrt{10}$	32	$18\sqrt{10}$	$45\sqrt{3}$	$-12\sqrt{30}$	40	0	-80	$-30\sqrt{3}$	40
${}^4K_{15/2}$	$-20\sqrt{3}$	$-32\sqrt{2}$	0	$-19\sqrt{3}$	$9\sqrt{10}$	-64	$-22\sqrt{10}$	$25\sqrt{3}$	$12\sqrt{30}$	40	0	0	$10\sqrt{3}$	-40
${}^4L_{15/2}$	$-6\sqrt{6}$	-10	$-3\sqrt{15}$	$-6\sqrt{6}$	$-6\sqrt{5}$	$-16\sqrt{2}$	$-6\sqrt{5}$	0	0	$-5\sqrt{2}$	$-6\sqrt{5}$	$-5\sqrt{2}$	0	$-5\sqrt{2}$
${}^2K_{13/2}$	$-20\sqrt{6}$	56	0	$-19\sqrt{6}$	$18\sqrt{5}$	$56\sqrt{2}$	$-44\sqrt{5}$	$25\sqrt{6}$	$-21\sqrt{15}$	$-35\sqrt{2}$	0	0	$10\sqrt{6}$	$35\sqrt{2}$
${}^4L_{13/2}$	$-9\sqrt{6}$	10	$-12\sqrt{15}$	$-9\sqrt{6}$	$-9\sqrt{5}$	$16\sqrt{2}$	$-9\sqrt{5}$	0	0	$5\sqrt{2}$	$21\sqrt{5}$	$5\sqrt{2}$	0	$5\sqrt{2}$
${}^2L_{13/2}$	$-18\sqrt{3}$	$-28\sqrt{2}$	0	$6\sqrt{3}$	$6\sqrt{10}$	-14	$-3\sqrt{10}$	$-30\sqrt{3}$	0	35	0	-70	$30\sqrt{3}$	35
${}^4L_{11/2}$	12	$5\sqrt{6}$	$-18\sqrt{10}$	12	$2\sqrt{30}$	$16\sqrt{3}$	$2\sqrt{30}$	0	0	$5\sqrt{3}$	$-9\sqrt{30}$	$5\sqrt{3}$	0	$5\sqrt{3}$
${}^2L_{11/2}$	$-9\sqrt{2}$	$8\sqrt{3}$	0	$3\sqrt{2}$	$2\sqrt{15}$	$2\sqrt{6}$	$-\sqrt{15}$	$-15\sqrt{2}$	0	$-5\sqrt{6}$	0	$10\sqrt{6}$	$15\sqrt{2}$	$-5\sqrt{6}$
${}^2H_{11/2}(210)(21)$	$4\sqrt{5}$	$-\sqrt{30}$	0	$-4\sqrt{5}$	$-3\sqrt{6}$	$-2\sqrt{15}$	$3\sqrt{6}$	$-5\sqrt{5}$	$-9\sqrt{2}$	$-2\sqrt{15}$	0	0	$-2\sqrt{5}$	$2\sqrt{15}$
${}^2H_{11/2}(210)(11)$	$-5\sqrt{2}$	$-8\sqrt{3}$	0	$5\sqrt{2}$	0	4	$3\sqrt{15}$	$-5\sqrt{2}$	0	$-5\sqrt{6}$	0	0	$-5\sqrt{2}$	$5\sqrt{6}$
${}^4G_{11/2}$	$-\sqrt{30}$	$3\sqrt{5}$	$-7\sqrt{3}$	$-\sqrt{30}$	-16	$-4\sqrt{10}$	-16	0	0	$-4\sqrt{10}$	-16	$-4\sqrt{10}$	0	$-4\sqrt{10}$
${}^4G_{9/2}$	$-21\sqrt{10}$	$10\sqrt{15}$	84	$-21\sqrt{10}$	$-35\sqrt{3}$	$16\sqrt{30}$	$-35\sqrt{3}$	0	0	$5\sqrt{30}$	$-35\sqrt{3}$	$5\sqrt{30}$	0	$5\sqrt{30}$
${}^2H_{9/2}(210)(21)$	$-4\sqrt{30}$	$-5\sqrt{5}$	0	$4\sqrt{30}$	18	$-5\sqrt{10}$	-18	$5\sqrt{30}$	$-15\sqrt{3}$	$-5\sqrt{10}$	0	0	$2\sqrt{30}$	$5\sqrt{10}$
${}^2H_{9/2}(210)(11)$	$2\sqrt{15}$	$-4\sqrt{10}$	0	$-2\sqrt{15}$	0	$4\sqrt{5}$	$-9\sqrt{2}$	$2\sqrt{15}$	0	$-5\sqrt{5}$	0	0	$2\sqrt{15}$	$5\sqrt{5}$
${}^4G_{9/2}$	$7\sqrt{15}$	$6\sqrt{10}$	$63\sqrt{6}$	$7\sqrt{15}$	$56\sqrt{2}$	$-16\sqrt{5}$	$56\sqrt{2}$	0	0	$-16\sqrt{5}$	$-120\sqrt{2}$	$-16\sqrt{5}$	0	$-16\sqrt{5}$
${}^2G_{9/2}(210)(21)$	$-9\sqrt{30}$	$-5\sqrt{5}$	0	$-\sqrt{30}$	-22	$-5\sqrt{10}$	32	$-5\sqrt{30}$	$35\sqrt{3}$	$10\sqrt{10}$	0	$-20\sqrt{10}$	$12\sqrt{30}$	$10\sqrt{10}$
${}^2G_{9/2}(210)(20)$	$-8\sqrt{15}$	$18\sqrt{10}$	0	$10\sqrt{15}$	$-16\sqrt{2}$	$-13\sqrt{5}$	$8\sqrt{2}$	$-6\sqrt{15}$	0	$5\sqrt{5}$	0	$-10\sqrt{5}$	$6\sqrt{15}$	$5\sqrt{5}$
${}^4F_{9/2}$	$-\sqrt{15}$	$-2\sqrt{10}$	$-\sqrt{6}$	$-\sqrt{15}$	0	0	0	0	0	0	0	0	0	0
${}^4G_{7/2}$	$\sqrt{30}$	$-6\sqrt{5}$	$-63\sqrt{3}$	$\sqrt{30}$	16	$8\sqrt{10}$	16	0	0	$8\sqrt{10}$	-96	$8\sqrt{10}$	0	$8\sqrt{10}$
${}^2G_{7/2}(210)(21)$	$9\sqrt{15}$	$-2\sqrt{10}$	0	$\sqrt{15}$	$11\sqrt{2}$	$-4\sqrt{5}$	$-16\sqrt{2}$	$5\sqrt{15}$	$14\sqrt{6}$	$8\sqrt{5}$	0	$-16\sqrt{5}$	$-12\sqrt{15}$	$8\sqrt{5}$
${}^2G_{7/2}(210)(20)$	$20\sqrt{3}$	$36\sqrt{2}$	0	$-25\sqrt{3}$	$8\sqrt{10}$	-26	$-4\sqrt{10}$	$15\sqrt{3}$	0	10	0	-20	$-15\sqrt{3}$	10
${}^4F_{7/2}$	$\sqrt{6}$	-2	$\sqrt{15}$	$\sqrt{6}$	0	0	0	0	0	0	0	0	0	0
${}^2F_{7/2}(210)(21)$	$-3\sqrt{3}$	$2\sqrt{2}$	0	$\sqrt{3}$	$3\sqrt{10}$	4	0	$\sqrt{3}$	$2\sqrt{30}$	-8	0	0	$-4\sqrt{3}$	8
${}^2F_{7/2}(100)(10)$	0	0	0	$\sqrt{3}$	0	2	0	$\sqrt{3}$	0	2	0	0	$\sqrt{3}$	-2
${}^4D_{7/2}$	$-6\sqrt{3}$	$-6\sqrt{2}$	0	$-6\sqrt{3}$	$\sqrt{30}$	$-2\sqrt{3}$	$\sqrt{30}$	0	0	$5\sqrt{3}$	$\sqrt{30}$	$5\sqrt{3}$	0	$5\sqrt{3}$
${}^4G_{5/2}$	$5\sqrt{3}$	$6\sqrt{2}$	$-7\sqrt{30}$	$5\sqrt{3}$	$8\sqrt{10}$	-16	$8\sqrt{10}$	0	0	-16	$8\sqrt{10}$	-16	0	-16
${}^4F_{5/2}$	-1	$-2\sqrt{6}$	$3\sqrt{10}$	-1	0	0	0	0	0	0	0	0	0	0
${}^2F_{5/2}(210)(21)$	$-3\sqrt{2}$	$-\sqrt{3}$	0	$\sqrt{2}$	$2\sqrt{15}$	$-\sqrt{6}$	0	$\sqrt{2}$	$-3\sqrt{5}$	$2\sqrt{6}$	0	0	$-4\sqrt{2}$	$-2\sqrt{6}$
${}^2F_{5/2}(100)(10)$	0	0	0	2	0	$-\sqrt{3}$	0	2	0	$-\sqrt{3}$	0	0	2	$-\sqrt{3}$
${}^4D_{5/2}$	$-15\sqrt{2}$	$2\sqrt{3}$	0	$-15\sqrt{2}$	$5\sqrt{15}$	$2\sqrt{6}$	$5\sqrt{15}$	0	0	$-5\sqrt{6}$	$-9\sqrt{15}$	$-5\sqrt{6}$	0	$5\sqrt{6}$
${}^2D_{5/2}(210)(21)$	$4\sqrt{2}$	$9\sqrt{3}$	0	$-12\sqrt{2}$	$2\sqrt{15}$	$9\sqrt{6}$	$6\sqrt{15}$	$17\sqrt{2}$	$21\sqrt{5}$	$3\sqrt{6}$	0	$-6\sqrt{6}$	$18\sqrt{2}$	$3\sqrt{6}$
${}^2D_{5/2}(210)(20)$	6	$-2\sqrt{6}$	0	-18	$-2\sqrt{30}$	$-4\sqrt{3}$	$\sqrt{30}$	-6	0	$\sqrt{3}$	0	$-2\sqrt{3}$	6	$\sqrt{3}$
${}^4F_{3/2}$	$-\sqrt{2}$	$\sqrt{3}$	$\sqrt{5}$	$-\sqrt{2}$	0	0	0	0	0	0	0	0	0	0
${}^4D_{3/2}$	0	$\sqrt{2}$	0	0	0	2	0	0	0	-5	$3\sqrt{10}$	-5	0	-5
${}^2D_{3/2}(210)(21)$	4	$-3\sqrt{6}$	0	-12	$\sqrt{30}$	$-6\sqrt{3}$	$3\sqrt{30}$	17	$-7\sqrt{10}$	$-2\sqrt{3}$	0	$4\sqrt{3}$	18	$-2\sqrt{3}$
${}^2D_{3/2}(210)(20)$	$3\sqrt{6}$	4	0	$-9\sqrt{6}$	$-6\sqrt{5}$	$4\sqrt{2}$	$3\sqrt{5}$	$-3\sqrt{6}$	0	$-\sqrt{2}$	0	$2\sqrt{2}$	$3\sqrt{6}$	$-\sqrt{2}$
${}^2P_{3/2}$	$-\sqrt{6}$	4	0	$\sqrt{6}$	0	$-2\sqrt{2}$	$-\sqrt{5}$	$-\sqrt{6}$	0	$-\sqrt{2}$	0	0	$-\sqrt{6}$	$\sqrt{2}$
${}^4S_{3/2}$	0	$\sqrt{2}$	0	0	0	-1	0	0	0	1	0	1	0	1
${}^4D_{1/2}$	$3\sqrt{6}$	-2	0	$3\sqrt{6}$	$-3\sqrt{5}$	$-2\sqrt{2}$	$-3\sqrt{5}$	0	0	$5\sqrt{2}$	$-3\sqrt{5}$	$5\sqrt{2}$	0	$5\sqrt{2}$
${}^2P_{1/2}$	$-2\sqrt{3}$	$-2\sqrt{2}$	0	$2\sqrt{3}$	0	2	$-\sqrt{10}$	$-2\sqrt{3}$	0	1	0	$-2\sqrt{3}$	0	-1