

**THE 380 CLASSES OF
MAGNETIC COMPLETELY TRANSPOSABLE TWIN LAWS**

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There are 380 classes of magnetic completely transposable twin laws. These 380 classes are listed below, subdivided into 32 sublists according to the family of the magnetic point group **J**. For each sublist the following information is provided:

Each sublist is headed by a numerical index of the family of the magnetic point group **J**. This is followed by the symbol for the class of the non-magnetic point group belonging to this family.

Each class of magnetic completely transposable twin laws with **J** belonging to a single family is given a numerical index consisting of two parts: The numerical index of the family to the left of a decimal point followed on the right by a numerical index of the class of the magnetic completely transposable twin law within the family. In parenthesis after the numerical index is a number, between 1 and 6 inclusive, denoting the type of the class of magnetic completely transposable twin law.

On the same line as the numerical index of each class of magnetic completely transposable twin law is the symbol for a representative magnetic completely transposable twin law belonging to that class. The symbol is given in the double group **J[F]** notation.

For each class of magnetic completely transposable twin laws a second line is given containing two alternative notations for the corresponding representative magnetic completely transposable twin law. The first is the single group notation consisting of the Hermann-Mauguin (International) notation for the magnetic point group **J** where each element symbol representing an element of **J** not contained in **F** is starred. The second alternative notation consists of 1) a symbol **Q** of a non-magnetic point group with the symbol (**H**) to denote a subgroup of index two of **Q** of elements not coupled with $1'$, and/or a symbol **{K}** to denote a subgroup of index two of **Q** of elements not coupled with 1^* , 2) such a symbol multiplied by $1'$, 1^* , or $1'^*$, or 3) a symbol **Q(H){K(R)}** where **R** is a subgroup of index 4 of **Q** not coupled with $1'$, 1^* , nor $1'^*$.

1) 1

1.1(2)

$11^1[1]$

11^{1*}

11^{1*}

2) $\overline{1}$

2.1(1)

$\overline{1}[1]$

$\overline{1}^*$

$\overline{1}\{1\}$

2.2(2)

$\overline{1}1^1[\overline{1}]$

$$\overline{11}^*$$

$$\overline{11}^*$$

2.3(3)

$$\overline{11}'[11']$$

$$\overline{1}^*1'$$

$$\overline{1}\{1\}1'$$

2.4(4)

$$\overline{11}'[\overline{1}']$$

$$\overline{1}1'^*$$

$$\overline{1}(1)1'^*$$

2.5(5)

$$\overline{1}'[1]$$

$$\overline{1}^*$$

$$\overline{1}(1)\{1\}$$

3) 2

3.1(1)

$2_z[1]$

2_z^*

$2_z\{1\}$

3.2(2)

$2_z1^i[2_z]$

2_z1^{i*}

2_z1^{i*}

3.3(3)

$2_z1^i[11^i]$

$2_z^*1^i$

$2_z\{1\}1^i$

3.4(4)

$2_z1^i[2_z^i]$

$2_z^i1^{i*}$

$2_z(1)1^{i*}$

3.5(5)

$2_z^I[1]$

2_z^{I*}

$2_z(1)\{1\}$

4) m

4.1(1)

$m_z[1]$

m_z^*

$m_z\{1\}$

4.2(2)

$m_z1'[m_z]$

$m_z1'^*$

$m_z1'^*$

4.3(3)

$m_z1'[11']$

m_z^*1'

$m_z\{1\}1'$

4.4(4)

$m_z1'[m_z']$

$m_z'1'^*$

$m_z(1)1'^*$

4.5(5)

$m_z^I[1]$

m_z^{I*}

$m_z(1)\{1\}$

5) $2/m$

5.1(1)

$$2_z/m_z[2_z]$$

$$2_z/m_z^*$$

$$2_z/m_z\{2_z\}$$

5.2(1)

$$2_z/m_z[m_z]$$

$$2_z^*/m_z$$

$$2_z/m_z\{m_z\}$$

5.3(1)

$$2_z/m_z[\bar{1}]$$

$$2_z^*/m_z^*$$

$$2_z/m_z\{\bar{1}\}$$

5.4(2)

$$2_z/m_z1'[2_z/m_z]$$

$$2_z/m_z1'^*$$

$$2_z/m_z1'^*$$

$$5.5(3) \quad 2_z/m_z 1' [2_z 1']$$

$$2_z/m_z^* 1'$$

$$2_z/m_z \{2_z\} 1'$$

$$5.6(3) \quad 2_z/m_z 1' [m_z 1']$$

$$2_z^*/m_z 1'$$

$$2_z/m_z \{m_z\} 1'$$

$$5.7(3) \quad 2_z/m_z 1' [\bar{1} 1']$$

$$2_z^*/m_z^* 1'$$

$$2_z/m_z \{\bar{1}\} 1'$$

$$5.8(4) \quad 2_z/m_z 1' [2_z/m_z']$$

$$2_z/m_z' 1'^*$$

$$2_z/m_z (2_z) 1'^*$$

$$5.9(4) \quad 2_z/m_z 1' [2_z'/m_z]$$

$$2_z^{\downarrow}/m_z 1^{\downarrow*}$$

$$2_z/m_z(m_z) 1^{\downarrow*}$$

5.10(4)

$$2_z^{\downarrow}/m_z 1^{\downarrow}[2_z^{\downarrow}/m_z^{\downarrow}]$$

$$2_z^{\downarrow}/m_z^{\downarrow} 1^{\downarrow*}$$

$$2_z/m_z(\overline{1}) 1^{\downarrow*}$$

5.11(5)

$$2_z^{\downarrow}/m_z[m_z]$$

$$2_z^{\downarrow*}/m_z$$

$$2_z/m_z(m_z)\{m_z\}$$

5.12(6)

$$2_z^{\downarrow}/m_z[2_z^{\downarrow}]$$

$$2_z^{\downarrow}/m_z^*$$

$$2_z/m_z(m_z)\{2_z(1)\}$$

5.13(6)

$$2_z^{\downarrow}/m_z[\overline{1}]$$

$$2_z^{\downarrow*}/m_z^*$$

$$2_z/m_z(m_z)\{\overline{1}(1)\}$$

5.14(5)

$$2_z/m_z^I[2_z]$$

$$2_z/m_z^{I*}$$

$$2_z/m_z(2_z)\{2_z\}$$

5.15(6)

$$2_z/m_z^I[\overline{1}]$$

$$2_z^*/m_z^{I*}$$

$$2_z/m_z(2_z)\{\overline{1}(1)\}$$

5.16(6)

$$2_z/m_z^I[m_z]$$

$$2_z^*/m_z^I$$

$$2_z/m_z(2_z)\{m_z(1)\}$$

5.17(5)

$$2_z^I/m_z^I[\overline{1}]$$

$$2_z^{I*}/m_z^{I*}$$

$$2_z/m_z(\overline{1})\{\overline{1}\}$$

5.18(6)

$$2_z^I/m_z^I[2_z^I]$$

$$2_z^I/m_z^{I*}$$

$$2_z/m_z(\overline{1})\{2_z(1)\}$$

5.19(6)

$$2_z^I/m_z^I[m_z^I]$$

$$2_z^{I*}/m_z^I$$

$$2_z/m_z(\overline{1})\{m_z(1)\}$$

6) 222

6.1(1)

$$2_x 2_y 2_z [2_z]$$

$$2_x * 2_y * 2_z$$

$$2_x 2_y 2_z \{2_z\}$$

6.2(2)

$$2_x 2_y 2_z 1^i [2_x 2_y 2_z]$$

$$2_x 2_y 2_z 1^{i*}$$

$$2_x 2_y 2_z 1^{i*}$$

6.3(3)

$$2_x 2_y 2_z 1^i [2_z 1^i]$$

$$2_x * 2_y * 2_z 1^i$$

$$2_x 2_y 2_z \{2_z\} 1^i$$

6.4(4)

$$2_x 2_y 2_z 1^i [2_x^i 2_y^i 2_z]$$

$$2_x^i 2_y^i 2_z 1^{i*}$$

$$2_x 2_y 2_z (2_z) 1^{i*}$$

6.5(5)

$$2_x^{\prime} 2_y^{\prime} 2_z^{\prime} [2_z]$$

$$2_x^{\prime} * 2_y^{\prime} * 2_z^{\prime}$$

$$2_x 2_y 2_z (2_z) \{2_z\}$$

6.6(6)

$$2_x^{\prime} 2_y^{\prime} 2_z^{\prime} [2_x^{\prime}]$$

$$2_x^{\prime} 2_y^{\prime} * 2_z^*$$

$$2_x 2_y 2_z (2_z) \{2_x(1)\}$$

7) mm2

$$7.1(1) \quad m_x m_y 2_z [m_y]$$

$$m_x^* m_y 2_z^*$$

$$m_x m_y 2_z \{m_y\}$$

$$7.2(1) \quad m_x m_y 2_z [2_z]$$

$$m_x^* m_y^* 2_z$$

$$m_x m_y 2_z \{2_z\}$$

$$7.3(2) \quad m_x m_y 2_z 1' [m_x m_y 2_z]$$

$$m_x m_y 2_z 1'^*$$

$$m_x m_y 2_z 1'^*$$

$$7.4(3) \quad m_x m_y 2_z 1' [m_y 1']$$

$$m_x^* m_y 2_z^* 1'$$

$$m_x m_y 2_z \{m_y\} 1'$$

$$7.5(3) \quad m_x m_y 2_1' [2_1']$$

$$m_x^* m_y^* 2_1'$$

$$m_x m_y 2_z \{2_z\} 1'$$

$$7.6(4) \quad m_x m_y 2_1' [m_x' m_y 2_z']$$

$$m_x' m_y 2_z' 1'^*$$

$$m_x m_y 2_z (m_y) 1'^*$$

$$7.7(4) \quad m_x m_y 2_1' [m_x' m_y' 2_z]$$

$$m_x' m_y' 2_z' 1'^*$$

$$m_x m_y 2_z (2_z) 1'^*$$

$$7.8(5) \quad m_x' m_y 2_z' [m_y]$$

$$m_x'^* m_y 2_z'^*$$

$$m_x m_y 2_z (m_y) \{m_y\}$$

7.9(6)

$$m_x^{\prime} m_y 2_z^{\prime} [2_z^{\prime}]$$

$$m_x^{\prime *} m_y^* 2_z^{\prime}$$

$$m_x m_y 2_z (m_y) \{2_z(1)\}$$

7.10(6)

$$m_x^{\prime} m_y 2_z^{\prime} [m_x^{\prime}]$$

$$m_x^{\prime} m_y^* 2_z^{\prime *} \quad m_x m_y 2_z (m_y) \{m_x(1)\}$$

7.11(5)

$$m_x^{\prime} m_y^{\prime} 2_z [2_z]$$

$$m_x^{\prime *} m_y^{\prime *} 2_z$$

$$m_x m_y 2_z (2_z) \{2_z\}$$

7.12(6)

$$m_x^{\prime} m_y^{\prime} 2_z [m_x^{\prime}]$$

$$m_x^{\prime} m_y^{\prime *} 2_z^*$$

$$m_x m_y 2_z (2_z) \{m_x(1)\}$$

8) mmm

$$8.1(1) \quad m_x m_y m_z [m_x m_y 2_z]$$

$$m_x m_y m_z^*$$

$$m_x m_y m_z \{m_x m_y 2_z\}$$

$$8.2(1) \quad m_x m_y m_z [2_z/m_z]$$

$$m_x^* m_y^* m_z$$

$$m_x m_y m_z \{2_z/m_z\}$$

$$8.3(1) \quad m_x m_y m_z [2_x 2_y 2_z]$$

$$m_x^* m_y^* m_z^*$$

$$m_x m_y m_z \{2_x 2_y 2_z\}$$

$$8.4(2) \quad m_x m_y m_z 1^i [m_x m_y m_z]$$

$$m_x m_y m_z 1^i^*$$

$$m_x m_y m_z 1^i^*$$

$$8.5(3) \quad m_x m_y m_z 1' [m_x m_y 2_z 1']$$

$$m_x m_y m_z^* 1'$$

$$m_x m_y m_z \{m_x m_y 2_z\} 1'$$

$$8.6(3) \quad m_x m_y m_z 1' [2_z / m_z 1']$$

$$m_x^* m_y^* m_z 1'$$

$$m_x m_y m_z \{2_z / m_z\} 1'$$

$$8.7(3) \quad m_x m_y m_z 1' [2_x 2_y 2_z 1']$$

$$m_x^* m_y^* m_z^* 1'$$

$$m_x m_y m_z \{2_x 2_y 2_z\} 1'$$

$$8.8(4) \quad m_x m_y m_z 1' [m_x' m_y m_z]$$

$$m_x' m_y m_z 1'^*$$

$$m_x m_y m_z (m_y m_z 2_x) 1'^*$$

$$8.9(4) \quad m_x m_y m_z 1' [m_x' m_y' m_z]$$

$$m_x^{\perp} m_y^{\perp} m_z 1^{*} \quad m_x m_y m_z (2_z / m_z) 1^{*}$$

$$8.10(4) \quad m_x m_y m_z 1^{\perp} [m_x^{\perp} m_y^{\perp} m_z^{\perp}]$$

$$m_x^{\perp} m_y^{\perp} m_z 1^{*} \quad m_x m_y m_z (2_x 2_y 2_z) 1^{*}$$

$$8.11(5) \quad m_x^{\perp} m_y m_z [m_y m_z 2_x]$$

$$m_x^{*} m_y m_z \quad m_x m_y m_z (m_y m_z 2_x) \{m_y m_z 2_x\}$$

$$8.12(6) \quad m_x^{\perp} m_y m_z [m_x^{\perp} m_y 2_z^{\perp}]$$

$$m_x^{\perp} m_y m_z^{*} \quad m_x m_y m_z (m_y m_z 2_x) \{m_x m_y 2_z (m_y)\}$$

$$8.13(6) \quad m_x^{\perp} m_y m_z [2_z / m_z]$$

$$m_x^{*} m_y^{*} m_z \quad m_x m_y m_z (m_y m_z 2_x) \{2_z / m_z (m_z)\}$$

$$8.14(6) \quad m_x^{-1} m_y m_z [2_x / m_x^{-1}]$$

$$m_x^{-1} m_y^* m_z^* \quad m_x m_y m_z (m_y m_z 2_x) \{2_x / m_x (2_x)\}$$

$$8.15(6) \quad m_x^{-1} m_y m_z [2_x 2_y^{-1} 2_z^{-1}]$$

$$m_x^{-1*} m_y^* m_z^* \quad m_x m_y m_z (m_y m_z 2_x) \{2_x 2_y 2_z (2_x)\}$$

$$8.16(5) \quad m_x^{-1} m_y^{-1} m_z [2_z / m_z]$$

$$m_x^{-1*} m_y^{-1*} m_z \quad m_x m_y m_z (2_z / m_z) \{2_z / m_z\}$$

$$8.17(6) \quad m_x^{-1} m_y^{-1} m_z [m_x^{-1} m_y^{-1} 2_z]$$

$$m_x^{-1} m_y^{-1} m_z^* \quad m_x m_y m_z (2_z / m_z) \{m_x m_y 2_z (2_z)\}$$

$$8.18(6) \quad m_x' m_y' m_z [m_y' m_z 2_x']$$

$$m_x'^* m_y' m_z$$

$$m_x m_y m_z (2_z / m_z) \{m_y m_z 2_x(m_z)\}$$

$$8.19(6) \quad m_x' m_y' m_z [2_x' / m_x']$$

$$m_x' m_y'^* m_z^*$$

$$m_x m_y m_z (2_z / m_z) \{2_x' / m_x' (\overline{1})\}$$

$$8.20(6) \quad m_x' m_y' m_z [2_x' 2_y' 2_z]$$

$$m_x'^* m_y'^* m_z^*$$

$$m_x m_y m_z (2_z / m_z) \{2_x 2_y 2_z (2_z)\}$$

$$8.21(5) \quad m_x' m_y' m_z [2_x 2_y 2_z]$$

$$m_x^{\prime *} m_y^{\prime *} m_z^{\prime *} \quad m_x m_y m_z (2_x 2_y 2_z) \{2_x 2_y 2_z\}$$

$$8.22(6) \quad m_x^{\prime} m_y^{\prime} m_z^{\prime} [m_x^{\prime} m_y^{\prime} 2_z]$$

$$m_x^{\prime} m_y^{\prime} m_z^{\prime *} \quad m_x m_y m_z (2_x 2_y 2_z) \{m_x m_y 2_z (2_z)\}$$

$$8.23(6) \quad m_x^{\prime} m_y^{\prime} m_z^{\prime} [2_z / m_z^{\prime}]$$

$$m_x^{\prime *} m_y^{\prime *} m_z^{\prime} \quad m_x m_y m_z (2_x 2_y 2_z) \{2_z / m_z (2_z)\}$$

9) 4

9.1(1)

$4_z[2_z]$

4_z^*

$4_z\{2_z\}$

9.2(2)

$4_z1'[4_z]$

$4_z1'^*$

$4_z1'^*$

9.3(3)

$4_z1'[2_z1']$

$4_z^*1'$

$4_z\{2_z\}1'$

9.4(4)

$4_z1'[4_z']$

$4_z'1'^*$

$4_z(2_z)1'^*$

9.5(5)

$4_z^I[2_z]$

4_z^{I*}

$4_z(2_z)\{2_z\}$

10) $\overline{4}$

10.1(1)

$\overline{4}_z[2_z]$

$\overline{4}_z^*$

$\overline{4}_z\{2_z\}$

10.2(2)

$\overline{4}_z1'[\overline{4}_z]$

$\overline{4}_z1'^*$

$\overline{4}_z1'^*$

10.3(3)

$\overline{4}_z1'[2_z1']$

$\overline{4}_z^*1'$

$\overline{4}_z\{2_z\}1'$

10.4(4)

$\overline{4}_z1'[\overline{4}_z']$

$\overline{4}_z'1'^*$

$\overline{4}_z(2_z)1'^*$

10.5(5)

$$\overline{4}_z[2_z]$$

$$\overline{4}_z^*$$

$$\overline{4}_z(2_z)\{2_z\}$$

11) 4/m

11.1(1)

$$4_z/m_z[2_z/m_z]$$

$$4_z^*/m_z$$

$$4_z/m_z\{2_z/m_z\}$$

11.2(1)

$$4_z/m_z[4_z]$$

$$4_z/m_z^*$$

$$4_z/m_z\{4_z\}$$

11.3(1)

$$4_z/m_z[\overline{4}_z]$$

$$4_z^*/m_z^*$$

$$4_z/m_z\{\overline{4}_z\}$$

11.4(2)

$$4_z/m_z1'[4_z/m_z]$$

$$4_z/m_z1'^*$$

$$4_z/m_z1'^*$$

$$11.5(3) \quad 4_z/m_z 1' [2_z/m_z 1']$$

$$4_z^*/m_z 1'$$

$$4_z/m_z \{2_z/m_z\} 1'$$

$$11.6(3) \quad 4_z/m_z 1' [4_z 1']$$

$$4_z/m_z^* 1'$$

$$4_z/m_z \{2_z/m_z\} 1'$$

$$11.7(3) \quad 4_z/m_z 1' [\bar{4}_z 1']$$

$$4_z^*/m_z^* 1'$$

$$4_z/m_z \{\bar{4}_z\} 1'$$

$$11.8(4) \quad 4_z/m_z 1' [4_z'/m_z]$$

$$4_z'/m_z 1'^*$$

$$4_z/m_z (2_z/m_z) 1'^*$$

$$11.9(4) \quad 4_z/m_z 1' [4_z'/m_z']$$

$$4_z/m_z 1^{1*}$$

$$4_z/m_z(4_z) 1^{1*}$$

11.10(4)

$$4_z/m_z 1^1[4_z^1/m_z^1]$$

$$4_z^1/m_z^1 1^{1*}$$

$$4_z/m_z(\overline{4}_z) 1^{1*}$$

11.11(5)

$$4_z^1/m_z[2_z/m_z]$$

$$4_z^{1*}/m_z$$

$$4_z/m_z(2_z/m_z)\{2_z/m_z\}$$

11.12(6)

$$4_z^1/m_z[4_z^1]$$

$$4_z^1/m_z^*$$

$$4_z/m_z(2_z/m_z)\{4_z(2_z)\}$$

11.13(6)

$$4_z^1/m_z[\overline{4}_z^1]$$

$$4_z^{1*}/m_z^*$$

$$4_z/m_z(2_z/m_z)\{\overline{4}_z(2_z)\}$$

11.14(5)

$$4_z/m_z^I[4_z]$$

$$4_z/m_z^{I*}$$

$$4_z/m_z(4_z)\{4_z\}$$

11.15(6)

$$4_z/m_z^I[\overline{4}_z^I]$$

$$4_z^*/m_z^{I*}$$

$$4_z/m_z(4_z)\{\overline{4}_z(2_z)\}$$

11.16(6)

$$4_z/m_z^I[2_z/m_z^I]$$

$$4_z^*/m_z^I$$

$$4_z/m_z(4_z)\{2_z/m_z(2_z)\}$$

11.17(5)

$$4_z^I/m_z^I[\overline{4}_z]$$

$$4_z^{I*}/m_z^{I*}$$

$$4_z/m_z(\overline{4_z})\{\overline{4_z}\}$$

11.18(6)

$$4_z^I/m_z^I[4_z^I]$$

$$4_z^I/m_z^{I*}$$

$$4_z/m_z(\overline{4_z})\{4_z(2_z)\}$$

11.19(6)

$$4_z^I/m_z^I[2_z/m_z^I]$$

$$4_z^{I*}/m_z^I$$

$$4_z/m_z(\overline{4_z})\{2_z/m_z(2_z)\}$$

12) 422

12.1(1)

$$4_z 2_x 2_{xy} [2_x 2_y 2_z]$$

$$4_z^* 2_x 2_{xy}^*$$

$$4_z 2_x 2_{xy} \{2_x 2_y 2_z\}$$

12.2(1)

$$4_z 2_x 2_{xy} [4_z]$$

$$4_z 2_x^* 2_{xy}^*$$

$$4_z 2_x 2_{xy} \{4_z\}$$

12.3(2)

$$4_z 2_x 2_{xy} 1^i [4_z 2_x 2_{xy}]$$

$$4_z 2_x 2_{xy} 1^{i*}$$

$$4_z 2_x 2_{xy} 1^{i*}$$

12.4(3)

$$4_z 2_x 2_{xy} 1^i [2_x 2_y 2_z 1^i]$$

$$4_z^* 2_x 2_{xy}^* 1^i$$

$$4_z 2_x 2_{xy} \{2_x 2_y 2_z\} 1^i$$

12.5(3)

$$4_z 2_x 2_{xy} 1^I [4_z 1^I]$$

$$4_z 2_x^* 2_{xy}^* 1^I$$

$$4_z 2_x 2_{xy} \{4_z\} 1^I$$

12.6(4)

$$4_z 2_x 2_{xy} 1^I [4_z^I 2_x 2_{xy}^I]$$

$$4_z^I 2_x 2_{xy}^I 1^{I*}$$

$$4_z 2_x 2_{xy} (2_x 2_y 2_z) 1^{I*}$$

12.7(4)

$$4_z 2_x 2_{xy} 1^I [4_z 2_x^I 2_{xy}^I]$$

$$4_z 2_x^I 2_{xy}^I 1^{I*}$$

$$4_z 2_x 2_{xy} (4_z) 1^{I*}$$

12.8(5)

$$4_z^I 2_x 2_{xy}^I [2_x 2_y 2_z]$$

$$4_z^I 2_x^* 2_{xy}^I 1^{I*}$$

$$4_z 2_x 2_{xy} (2_x 2_y 2_z) \{2_x 2_y 2_z\}$$

12.9(6)

$$4_z^{\perp} 2_x 2_{xy}^{\perp} [4_z^{\perp}]$$

$$4_z^{\perp} 2_x^* 2_{xy}^{\perp *}$$

$$4_z 2_x 2_{xy} (2_x 2_y 2_z) \{4_z (2_z)\}$$

12.10(6)

$$4_z^{\perp} 2_x 2_{xy}^{\perp} [2_{xy}^{\perp} 2_{\bar{xy}}^{\perp} 2_z]$$

$$4_z^{\perp} 2_x^* 2_{xy}^{\perp *}$$

$$4_z 2_x 2_{xy} (2_x 2_y 2_z) \{2_{xy} 2_{\bar{xy}} 2_z (2_z)\}$$

12.11(5)

$$4_z 2_x^{\perp} 2_{xy}^{\perp} [4_z]$$

$$4_z 2_x^{\perp} 2_{xy}^{\perp *}$$

$$4_z 2_x 2_{xy} (4_z) \{4_z\}$$

12.12(6)

$$4_z 2_x^{\perp} 2_{xy}^{\perp} [2_x^{\perp} 2_y^{\perp} 2_z]$$

$$4_z^* 2_x^{\perp} 2_{xy}^{\perp *}$$

$$4_z 2_x 2_{xy} (4_z) \{2_x 2_y 2_z (2_z)\}$$

13) 4mm

13.1(1)

$$4_z m_x m_{xy} [m_{xy} m_{\bar{xy}} 2_z]$$

$$4_z^* m_x^* m_{xy}$$

$$4_z m_x m_{xy} \{m_{xy} m_{\bar{xy}} 2_z\}$$

13.2(1)

$$4_z m_x m_{xy} [4_z]$$

$$4_z m_x^* m_{xy}^*$$

$$4_z m_x m_{xy} \{4_z\}$$

13.3(2)

$$4_z m_x m_{xy} 1^i [4_z m_x m_{xy}]$$

$$4_z m_x m_{xy} 1^{i*}$$

$$4_z m_x m_{xy} 1^{i*}$$

13.4(3)

$$4_z m_x m_{xy} 1^i [m_{xy} m_{\bar{xy}} 2_z 1^i]$$

$$4_z^* m_x^* m_{xy} 1^i$$

$$4_z m_x m_{xy} \{m_{xy} m_{\bar{xy}} 2_z\} 1^i$$

13.5(3)

$$4_z m_x m_{xy} 1' [4_z 1']$$

$$4_z m_x^* m_{xy}^* 1'$$

$$4_z m_x m_{xy} \{4_z\} 1'$$

13.6(4)

$$4_z m_x m_{xy} 1' [4_z' m_x' m_{xy}]$$

$$4_z' m_x' m_{xy} 1'^*$$

$$4_z m_x m_{xy} (m_{xy} m_{\bar{xy}} 2_z) 1'^*$$

13.7(4)

$$4_z m_x m_{xy} 1' [4_z m_x' m_{xy}']$$

$$4_z m_x' m_{xy}' 1'^*$$

$$4_z m_x m_{xy} (4_z) 1'^*$$

13.8(5)

$$4_z' m_x' m_{xy} [m_{xy} m_{\bar{xy}} 2_z]$$

$$4_z'^* m_x'^* m_{xy}$$

$$4_z m_x m_{xy} (m_{xy} m_{\bar{xy}} 2_z) \{m_{xy} m_{\bar{xy}} 2_z\}$$

13.9(6)

$$4_z^{\dagger} m_x^{\dagger} m_{xy} [4_z^{\dagger}]$$

$$4_z^{\dagger} m_x^{\dagger *} m_{xy}^*$$

$$4_z m_x m_{xy} (m_{xy} m_{\bar{xy}} 2_z) \{4_z (2_z)\}$$

13.10(6)

$$4_z^{\dagger} m_x^{\dagger} m_{xy} [m_x^{\dagger} m_y^{\dagger} 2_z]$$

$$4_z^{\dagger *} m_x^{\dagger} m_{xy}^*$$

$$4_z m_x m_{xy} (m_{xy} m_{\bar{xy}} 2_z) \{m_x m_y 2_z (2_z)\}$$

13.11(5)

$$4_z m_x^{\dagger} m_{xy}^{\dagger} [4_z]$$

$$4_z m_x^{\dagger *} m_{xy}^{\dagger *}$$

$$4_z m_x m_{xy} (4_z) \{4_z\}$$

13.12(6)

$$4_z m_x^{\dagger} m_{xy}^{\dagger} [m_x^{\dagger} m_y^{\dagger} 2_z]$$

$$4_z^{\dagger *} m_x^{\dagger} m_{xy}^{\dagger *}$$

$$4_z m_x m_{xy} (4_z) \{m_x m_y 2_z (2_z)\}$$

14) $\overline{4}2m$

14.1(1)

$$\overline{4}_z 2_x m_{xy} [2_x 2_y 2_z]$$

$$\overline{4}_z^* 2_x m_{xy}^*$$

$$\overline{4}_z 2_x m_{xy} \{2_x 2_y 2_z\}$$

14.2(1)

$$\overline{4}_z 2_x m_{xy} [m_{xy} m_{\bar{xy}} 2_z]$$

$$\overline{4}_z^* 2_x^* m_{xy}$$

$$\overline{4}_z 2_x m_{xy} \{m_{xy} m_{\bar{xy}} 2_z\}$$

14.3(1)

$$\overline{4}_z 2_x m_{xy} [\overline{4}_z]$$

$$\overline{4}_z 2_x^* m_{xy}^*$$

$$\overline{4}_z 2_x m_{xy} \{\overline{4}_z\}$$

14.4(2)

$$\overline{4}_z 2_x m_{xy} 1' [\overline{4}_z 2_x m_{xy}]$$

$$\overline{4}_z 2_x m_{xy} 1'^*$$

$$\overline{4}_z 2_x m_{xy} 1'^*$$

$$14.5(3) \quad \overline{4}_z 2_x m_{xy} 1' [2_x 2_y 2_z 1']$$

$$\overline{4}_z^* 2_x m_{xy}^* 1'$$

$$\overline{4}_z 2_x m_{xy} \{2_x 2_y 2_z\} 1'$$

$$14.6(3) \quad \overline{4}_z 2_x m_{xy} 1' [m_{xy} m_{\bar{xy}} 2_z 1']$$

$$\overline{4}_z^* 2_x^* m_{xy} 1'$$

$$\overline{4}_z 2_x m_{xy} \{m_{xy} m_{\bar{xy}} 2_z\} 1'$$

$$14.7(3) \quad \overline{4}_z 2_x m_{xy} 1' [\overline{4}_z 1']$$

$$\overline{4}_z 2_x^* m_{xy}^* 1'$$

$$\overline{4}_z 2_x m_{xy} \{\overline{4}_z\} 1'$$

$$14.8(4) \quad \overline{4}_z 2_x m_{xy} 1' [\overline{4}_z' 2_x m_{xy}']$$

$$\overline{4}_z' 2_x m_{xy}' 1'^*$$

$$\overline{4}_z 2_x m_{xy} (2_x 2_y 2_z) 1'^*$$

$$14.9(4) \quad \overline{4}_z 2_x m_{xy} 1' [\overline{4}_z' 2_x' m_{xy}']$$

$$\overline{4}_z'2_x'm_{xy}1'^* \qquad \overline{4}_z2_xm_{xy}(m_{xy}m_{\overline{xy}}2_z)1'^*$$

$$14.10(4) \qquad \overline{4}_z2_xm_{xy}1'[\overline{4}_z2_x'm_{xy}']$$

$$\overline{4}_z2_x'm_{xy}1'^* \qquad \overline{4}_z2_xm_{xy}(\overline{4}_z)1'^*$$

$$14.11(5) \qquad \overline{4}_z'2_xm_{xy}'[2_x2_y2_z]$$

$$\overline{4}_z'^*2_xm_{xy}'^* \qquad \overline{4}_z2_xm_{xy}(2_x2_y2_z)\{2_x2_y2_z\}$$

$$14.12(6) \qquad \overline{4}_z'2_xm_{xy}'[\overline{4}_z']$$

$$\overline{4}_z'2_x^*m_{xy}'^* \qquad \overline{4}_z2_xm_{xy}(2_x2_y2_z)\{\overline{4}_z(2_z)\}$$

$$14.13(6) \qquad \overline{4}_z'2_xm_{xy}'[m_{xy}'m_{\overline{xy}}'2_z]$$

$$\overline{4}_z'^*2_x^*m_{xy}' \qquad \overline{4}_z2_xm_{xy}(2_x2_y2_z)\{m_{xy}m_{\overline{xy}}2_z(2_z)\}$$

14.14(5)

$$\overline{4}_z'2_x'm_{xy}[m_{xy}m_{\overline{xy}}2_z]$$

$$\overline{4}_z'2_x'^*m_{xy}$$

$$\overline{4}_z2_xm_{xy}(m_{xy}m_{\overline{xy}}2_z)\{m_{xy}m_{\overline{xy}}2_z\}$$

14.15(6)

$$\overline{4}_z'2_x'm_{xy}[\overline{4}_z']$$

$$\overline{4}_z'2_x'^*m_{xy}^*$$

$$\overline{4}_z2_xm_{xy}(m_{xy}m_{\overline{xy}}2_z)\{\overline{4}_z(2_z)\}$$

14.16(6)

$$\overline{4}_z'2_x'm_{xy}[2_x'2_y'2_z]$$

$$\overline{4}_z'2_x'm_{xy}^*$$

$$\overline{4}_z2_xm_{xy}(m_{xy}m_{\overline{xy}}2_z)\{2_x2_y2_z(2_z)\}$$

14.17(5)

$$\overline{4}_z2_x'm_{xy}[\overline{4}_z]$$

$$\overline{4}_z 2_x^{\perp *} m_{xy}^{\perp *}$$

$$\overline{4}_z 2_x m_{xy}(\overline{4}_z) \{ \overline{4}_z \}$$

14.18(6)

$$\overline{4}_z 2_x^{\perp} m_{xy}^{\perp} [m_{xy}^{\perp} m_{\overline{xy}}^{\perp} 2_z]$$

$$\overline{4}_z^* 2_x^{\perp *} m_{xy}^{\perp}$$

$$\overline{4}_z 2_x m_{xy}(\overline{4}_z) \{ m_{xy} m_{\overline{xy}} 2_z(2_z) \}$$

14.19(6)

$$\overline{4}_z 2_x^{\perp} m_{xy}^{\perp} [2_x^{\perp} 2_y^{\perp} 2_z]$$

$$\overline{4}_z^* 2_x^{\perp} m_{xy}^{\perp *}$$

$$\overline{4}_z 2_x m_{xy}(\overline{4}_z) \{ 2_x 2_y 2_z(2_z) \}$$

15) 4/mmm

15.1(1)

$$4_z/m_z m_x m_{xy} [m_x m_y m_z]$$

$$4_z^*/m_z m_x m_{xy}^*$$

$$4_z/m_z m_x m_{xy} \{m_x m_y m_z\}$$

15.2(1)

$$4_z/m_z m_x m_{xy} [4_z/m_z]$$

$$4_z/m_z m_x^* m_{xy}^*$$

$$4_z/m_z m_x m_{xy} \{4_z/m_z\}$$

15.3(1)

$$4_z/m_z m_x m_{xy} [4_z^2 m_x^2 m_{xy}^2]$$

$$4_z/m_z^* m_x^* m_{xy}^*$$

$$4_z/m_z m_x m_{xy} \{4_z^2 m_x^2 m_{xy}^2\}$$

15.4(1)

$$4_z/m_z m_x m_{xy} [4_z m_x m_{xy}]$$

$$4_z/m_z^* m_x m_{xy}$$

$$4_z/m_z m_x m_{xy} \{4_z m_x m_{xy}\}$$

$$15.5(1) \quad 4_z/m_z m_x m_{xy} [\overline{4}_z 2_x m_{xy}]$$

$$4_z^*/m_z^* m_x^* m_{xy} \quad 4_z/m_z m_x m_{xy} \{\overline{4}_z 2_x m_{xy}\}$$

$$15.6(2) \quad 4_z/m_z m_x m_{xy} 1^{\dagger} [4_z/m_z m_x m_{xy}]$$

$$4_z/m_z m_x m_{xy} 1^{\dagger*} \quad 4_z/m_z m_x m_{xy} 1^{\dagger*}$$

$$15.7(3) \quad 4_z/m_z m_x m_{xy} 1^{\dagger} [m_x m_y m_z 1^{\dagger}]$$

$$4_z^*/m_z m_x m_{xy}^* 1^{\dagger} \quad 4_z/m_z m_x m_{xy} \{m_x m_y m_z\} 1^{\dagger}$$

$$15.8(3) \quad 4_z/m_z m_x m_{xy} 1^{\dagger} [4_z/m_z 1^{\dagger}]$$

$$4_z/m_z m_x^* m_{xy}^* 1^{\dagger} \quad 4_z/m_z m_x m_{xy} \{4_z/m_z\} 1^{\dagger}$$

$$15.9(3) \quad 4_z/m_z m_x m_{xy} 1^{\dagger} [4_z 2_x 2_{xy} 1^{\dagger}]$$

$$4_z/m_z^*m_x^*m_{xy}^*1^i$$

$$4_z/m_zm_xm_{xy}\{4_z2_x2_{xy}\}1^i$$

15.10(3)

$$4_z/m_zm_xm_{xy}1^i[4_zm_xm_{xy}1^i]$$

$$4_z/m_z^*m_xm_{xy}1^i$$

$$4_z/m_zm_xm_{xy}\{4_zm_xm_{xy}\}1^i$$

15.11(3)

$$4_z/m_zm_xm_{xy}1^i[\overline{4}_z2_xm_{xy}1^i]$$

$$4_z^*/m_z^*m_x^*m_{xy}1^i$$

$$4_z/m_zm_xm_{xy}\{\overline{4}_z2_xm_{xy}\}1^i$$

15.12(4)

$$4_z/m_zm_xm_{xy}1^i[4_z^i/m_zm_xm_{xy}^i]$$

$$4_z^i/m_zm_xm_{xy}^i1^{i*}$$

$$4_z/m_zm_xm_{xy}(m_xm_y m_z)1^{i*}$$

15.13(4)

$$4_z/m_zm_xm_{xy}1^i[4_z/m_zm_x^im_{xy}^i]$$

$$4_z/m_zm_x^im_{xy}^i1^{i*}$$

$$4_z/m_zm_xm_{xy}(4_z/m_z)1^{i*}$$

15.14(4)

$$4_z/m_z m_x m_{xy} 1^1 [4_z/m_z^1 m_x^1 m_{xy}^1]$$

$$4_z/m_z^1 m_x^1 m_{xy}^1 1^{1*}$$

$$4_z/m_z m_x m_{xy} (4_z 2_x 2_{xy}) 1^{1*}$$

15.15(4)

$$4_z/m_z m_x m_{xy} 1^1 [4_z/m_z^1 m_x m_{xy}]$$

$$4_z/m_z^1 m_x m_{xy} 1^{1*}$$

$$4_z/m_z m_x m_{xy} (4_z m_x m_{xy}) 1^{1*}$$

15.16(4)

$$4_z/m_z m_x m_{xy} 1^1 [4_z^1/m_z^1 m_x^1 m_{xy}]$$

$$4_z^1/m_z^1 m_x^1 m_{xy} 1^{1*}$$

$$4_z/m_z m_x m_{xy} (\overline{4}_z 2_x m_{xy}) 1^{1*}$$

15.17(5)

$$4_z/m_z m_x^1 m_{xy}^1 [4_z/m_z]$$

$$4_z/m_z m_x^{1*} m_{xy}^{1*}$$

$$4_z/m_z m_x m_{xy} (4_z/m_z) \{4_z/m_z\}$$

$$15.18(6) \quad 4_z/m_z m_x' m_{xy}' [m_x' m_y' m_z]$$

$$4_z^*/m_z m_x' m_{xy}'^*$$

$$4_z/m_z m_x m_{xy} (4_z/m_z) \{m_x m_y m_z (2_z/m_z)\}$$

$$15.19(6) \quad 4_z/m_z m_x' m_{xy}' [4_z 2_x' 2_{xy}']$$

$$4_z/m_z^* m_x'^* m_{xy}'^*$$

$$4_z/m_z m_x m_{xy} (4_z/m_z) \{4_z 2_x 2_{xy} (4_z)\}$$

$$15.20(6) \quad 4_z/m_z m_x' m_{xy}' [4_z m_x' m_{xy}']$$

$$4_z/m_z^* m_x' m_{xy}'$$

$$4_z/m_z m_x m_{xy} (4_z/m_z) \{4_z m_x m_{xy} (4_z)\}$$

$$15.21(6) \quad 4_z/m_z m_x' m_{xy}' [\overline{4}_z 2_x' m_{xy}']$$

$$4_z^*/m_z^*m_x^{\prime *}m_{xy}^{\prime}$$

$$4_z/m_zm_xm_{xy}(4_z/m_z)\{\overline{4}_z2_xm_{xy}(\overline{4}_z)\}$$

15.22(5)

$$4_z^{\prime}/m_zm_xm_{xy}^{\prime}[m_xm_y m_z]$$

$$4_z^{\prime *} /m_zm_xm_{xy}^{\prime *}$$

$$4_z/m_zm_xm_{xy}(m_xm_y m_z)\{m_xm_y m_z\}$$

15.23(6)

$$4_z^{\prime}/m_zm_xm_{xy}^{\prime}[4_z^{\prime}/m_z]$$

$$4_z^{\prime}/m_zm_x^*m_{xy}^{\prime *}$$

$$4_z/m_zm_xm_{xy}(m_xm_y m_z)\{4_z/m_z(2_z/m_z)\}$$

15.24(6)

$$4_z^{\prime}/m_zm_xm_{xy}^{\prime}[m_{xy}^{\prime}m_{\overline{xy}}^{\prime} m_z]$$

$$4_z^{\prime *} /m_zm_x^*m_{xy}^{\prime}$$

$$4_z/m_zm_xm_{xy}(m_xm_y m_z)\{m_{xy}m_{\overline{xy}} m_z(2_z/m_z)\}$$

15.25(6)

$$4_z^{\prime}/m_zm_xm_{xy}^{\prime}[4_z^{\prime}2_x2_{xy}^{\prime}]$$

$$4_z^{\prime}/m_z^*m_x^*m_{xy}^{\prime *}$$

$$4_z/m_zm_xm_{xy}(m_xm_y m_z)\{4_z2_x2_{xy}(2_x2_y2_z)\}$$

15.26(6)

$$4_z^{\prime}/m_z m_x m_{xy}^{\prime} [4_z^{\prime} m_x m_{xy}^{\prime}]$$

$$4_z^{\prime}/m_z^* m_x m_{xy}^{\prime}$$

$$4_z^{\prime}/m_z m_x m_{xy} (m_x m_y m_z) \{4_z m_x m_{xy} (m_x m_y 2_z)\}$$

15.27(6)

$$4_z^{\prime}/m_z m_x m_{xy}^{\prime} [\overline{4}_z^{\prime} 2_x m_{xy}^{\prime}]$$

$$4_z^{\prime*}/m_z^* m_x^* m_{xy}^{\prime}$$

$$4_z^{\prime}/m_z m_x m_{xy} (m_x m_y m_z) \{\overline{4}_z 2_x m_{xy} (2_x 2_y 2_z)\}$$

15.28(6)

$$4_z^{\prime}/m_z m_x m_{xy}^{\prime} [\overline{4}_z^{\prime} m_x 2_{xy}^{\prime}]$$

$$4_z^{\prime*}/m_z^* m_x m_{xy}^{\prime*}$$

$$4_z^{\prime}/m_z m_x m_{xy} (m_x m_y m_z) \{\overline{4}_z m_x 2_{xy} (m_x m_y 2_z)\}$$

15.29(5)

$$4_z^{\prime}/m_z^{\prime} m_x^{\prime} m_{xy}^{\prime} [4_z 2_x 2_{xy}]$$

$$4_z^{\prime}/m_z^{\prime*} m_x^{\prime*} m_{xy}^{\prime*}$$

$$4_z^{\prime}/m_z m_x m_{xy} (4_z 2_x 2_{xy}) \{4_z 2_x 2_{xy}\}$$

15.30(6)

$$4_z/m_z'm_x'm_{xy}'[4_z/m_z']$$

$$4_z/m_z'm_x'^*m_{xy}'^*$$

$$4_z/m_zm_xm_{xy}(4_z2_x2_{xy})\{4_z/m_z(4_z)\}$$

15.31(6)

$$4_z/m_z'm_x'm_{xy}'[m_x'm_y'm_z']$$

$$4_z^*/m_z'm_x'm_{xy}'^*$$

$$4_z/m_zm_xm_{xy}(4_z2_x2_{xy})\{m_xm_y m_z(2_x2_y2_z)\}$$

15.32(6)

$$4_z/m_z'm_x'm_{xy}'[4_zm_x'm_{xy}']$$

$$4_z/m_z'^*m_x'm_{xy}'$$

$$4_z/m_zm_xm_{xy}(4_z2_x2_{xy})\{4_zm_xm_{xy}(4_z)\}$$

15.33(6)

$$4_z/m_z'm_x'm_{xy}'[\overline{4}_z'2_xm_{xy}']$$

$$4_z^*/m_z'^*m_x'^*m_{xy}'$$

$$4_z/m_zm_xm_{xy}(4_z2_x2_{xy})\{\overline{4}_z'2_xm_{xy}(2_x2_y2_z)\}$$

15.34(5)

$$4_z/m_z^I m_x m_{xy} [4_z m_x m_{xy}]$$

$$4_z/m_z^I m_x m_{xy}$$

$$4_z/m_z m_x m_{xy} (4_z m_x m_{xy}) \{4_z m_x m_{xy}\}$$

15.35(6)

$$4_z/m_z^I m_x m_{xy} [4_z/m_z^I]$$

$$4_z/m_z^I m_x^* m_{xy}^*$$

$$4_z/m_z m_x m_{xy} (4_z m_x m_{xy}) \{4_z/m_z (4_z)\}$$

15.36(6)

$$4_z/m_z^I m_x m_{xy} [m_x m_y m_z^I]$$

$$4_z^*/m_z^I m_x m_{xy}^*$$

$$4_z/m_z m_x m_{xy} (4_z m_x m_{xy}) \{m_x m_y m_z (m_x m_y 2_z)\}$$

15.37(6)

$$4_z/m_z^I m_x m_{xy} [4_z 2_x^I 2_{xy}^I]$$

$$4_z/m_z^I m_x^* m_{xy}^*$$

$$4_z/m_z m_x m_{xy} (4_z m_x m_{xy}) \{4_z 2_x 2_{xy} (4_z)\}$$

15.38(6)

$$4_z/m_z^{\perp}m_xm_{xy}[\overline{4}_z^{\perp}2_x^{\perp}m_{xy}]$$

$$4_z^*/m_z^{\perp}*m_x^*m_{xy}$$

$$4_z/m_zm_xm_{xy}(4_zm_xm_{xy})\{\overline{4}_z2_xm_{xy}(m_{xy}m_{\overline{xy}}2_z)\}$$

15.39(5)

$$4_z^{\perp}/m_z^{\perp}m_x^{\perp}m_{xy}[\overline{4}_z2_xm_{xy}]$$

$$4_z^{\perp}*/m_z^{\perp}*m_x^{\perp}*m_{xy}$$

$$4_z/m_zm_xm_{xy}(\overline{4}_z2_xm_{xy})\{\overline{4}_z2_xm_{xy}\}$$

15.40(6)

$$4_z^{\perp}/m_z^{\perp}m_x^{\perp}m_{xy}[4_z^{\perp}/m_z^{\perp}]$$

$$4_z^{\perp}/m_z^{\perp}m_x^{\perp}*m_{xy}^*$$

$$4_z/m_zm_xm_{xy}(\overline{4}_z2_xm_{xy})\{4_z/m_z(\overline{4}_z)\}$$

15.41(6)

$$4_z^{\perp}/m_z^{\perp}m_x^{\perp}m_{xy}[m_x^{\perp}m_y^{\perp}m_z^{\perp}]$$

$$4_z^{\perp}*/m_z^{\perp}m_x^{\perp}m_{xy}^*$$

$$4_z/m_zm_xm_{xy}(\overline{4}_z2_xm_{xy})\{m_xm_y m_z(2_x2_y2_z)\}$$

$$15.42(6) \quad 4_z'/m_z'm_x'm_{xy}[m_{xy}m_{\bar{xy}}m_z']$$

$$4_z^{i*}/m_z'm_x^{i*}m_{xy} \quad 4_z/m_zm_xm_{xy}(\bar{4}_z2_xm_{xy})\{m_{xy}m_{\bar{xy}}m_z(m_{xy}m_{\bar{xy}}2_z)\}$$

$$15.43(6) \quad 4_z'/m_z'm_x'm_{xy}[4_z'2_x2_{xy}']$$

$$4_z'/m_z^{i*}m_x^{i*}m_{xy}^* \quad 4_z/m_zm_xm_{xy}(\bar{4}_z2_xm_{xy})\{4_z2_x2_{xy}(2_x2_y2_z)\}$$

$$15.44(6) \quad 4_z'/m_z'm_x'm_{xy}[4_z'm_x'm_{xy}]$$

$$4_z'/m_z^{i*}m_x^{i*}m_{xy} \quad 4_z/m_zm_xm_{xy}(\bar{4}_z2_xm_{xy})\{4_zm_xm_{xy}(m_{xy}m_{\bar{xy}}2_z)\}$$

$$15.45(6) \quad 4_z'/m_z'm_x'm_{xy}[\bar{4}_zm_x'2_{xy}']$$

$$4_z^{i*}/m_z^{i*}m_x^{i*}m_{xy}^* \quad 4_z/m_zm_xm_{xy}(\bar{4}_z2_xm_{xy})\{\bar{4}_zm_x2_{xy}(\bar{4}_z)\}$$

16) 3

16.1(2)

$3_z 1' [3_z]$

$3_z 1'^*$

$3_z 1'^*$

17) $\overline{3}$

17.1(1)

$\overline{3}_z [3_z]$

$\overline{3}_z^*$

$\overline{3}_z \{3_z\}$

17.2(2)

$\overline{3}_z 1' [\overline{3}_z]$

$\overline{3}_z 1'^*$

$\overline{3}_z 1'^*$

$$17.3(3) \quad \overline{3}_z 1' [3_z 1']$$

$$\overline{3}_z^* 1'$$

$$\overline{3}_z \{3_z\} 1'$$

$$17.4(4) \quad \overline{3}_z 1' [\overline{3}_z']$$

$$\overline{3}_z' 1'^*$$

$$\overline{3}_z (3_z) 1'^*$$

$$17.5(5) \quad \overline{3}_z' [3_z]$$

$$\overline{3}_z'^*$$

$$\overline{3}_z (3_z) \{3_z\}$$

18) 32

18.1(1)

$$3_2 2_x [3_z]$$

$$3_2 2_x^*$$

$$3_2 2_x \{3_z\}$$

18.2(2)

$$3_2 2_x 1^i [3_2 2_x]$$

$$3_2 2_x 1^i^*$$

$$3_2 2_x 1^i^*$$

18.3(3)

$$3_2 2_x 1^i [3_z 1^i]$$

$$3_2 2_x^* 1^i$$

$$3_2 2_x \{3_z\} 1^i$$

18.4(4)

$$3_2 2_x 1^i [3_2 2_x]$$

$$3_2 2_x^i 1^i^*$$

$$3_2 2_x (3_z) 1^i^*$$

18.5(5)

$3_2 2_x^I [3_z]$

$3_2 2_x^{I*}$

$3_2 2_x (3_z) \{3_z\}$

19) 3m

19.1(1)

$$3_z m_x [3_z]$$

$$3_z m_x^*$$

$$3_z m_x \{3_z\}$$

19.2(2)

$$3_z m_x 1^i [3_z m_x]$$

$$3_z m_x 1^{i*}$$

$$3_z m_x 1^{i*}$$

19.3(3)

$$3_z m_x 1^i [3_z 1^i]$$

$$3_z m_x^* 1^i$$

$$3_z m_x \{3_z\} 1^i$$

19.4(4)

$$3_z m_x 1^i [3_z m_x^i]$$

$$3_z m_x^i 1^{i*}$$

$$3_z m_x (3_z) 1^{i*}$$

19.5(5)

$$3_z m_x [3_z]$$

$$3_z m_x^{I*}$$

$$3_z m_x(3_z)\{3_z\}$$

20) $\overline{3}m$

20.1(1)

$$\overline{3}_zm_x[\overline{3}_z]$$

$$\overline{3}_zm_x^*$$

$$\overline{3}_zm_x\{\overline{3}_z\}$$

20.2(1)

$$\overline{3}_zm_x[3_zm_x]$$

$$\overline{3}_z^*m_x$$

$$\overline{3}_zm_x\{3_zm_x\}$$

20.3(1)

$$\overline{3}_zm_x[3_z2_x]$$

$$\overline{3}_z^*m_x^*$$

$$\overline{3}_zm_x\{3_z2_x\}$$

20.4(2)

$$\overline{3}_zm_x1^i[\overline{3}_zm_x]$$

$$\overline{3}_zm_x1^{i*}$$

$$\overline{3}_zm_x1^{i*}$$

$$20.5(3) \quad \overline{3}_z m_x 1' [\overline{3}_z 1']$$

$$\overline{3}_z m_x^* 1'$$

$$\overline{3}_z m_x \{\overline{3}_z\} 1'$$

$$20.6(3) \quad \overline{3}_z m_x 1' [3_z m_x 1']$$

$$\overline{3}_z^* m_x 1'$$

$$\overline{3}_z m_x \{3_z m_x\} 1'$$

$$20.7(3) \quad \overline{3}_z m_x 1' [3_z 2_x 1']$$

$$\overline{3}_z^* m_x^* 1'$$

$$\overline{3}_z m_x \{3_z 2_x\} 1'$$

$$20.8(4) \quad \overline{3}_z m_x 1' [\overline{3}_z m_x']$$

$$\overline{3}_z m_x' 1'^*$$

$$\overline{3}_z m_x (\overline{3}_z) 1'^*$$

$$20.9(4) \quad \overline{3}_z m_x 1' [\overline{3}_z' m_x]$$

$$\overline{3}_z^{\prime}m_x1^{\prime*}$$

$$\overline{3}_zm_x(3_zm_x)1^{\prime*}$$

20.10(4)

$$\overline{3}_zm_x1^{\prime}[\overline{3}_z^{\prime}m_x^{\prime}]$$

$$\overline{3}_z^{\prime}m_x^{\prime}1^{\prime*}$$

$$\overline{3}_zm_x(3_z2_x)1^{\prime*}$$

20.11(5)

$$\overline{3}_zm_x^{\prime}[\overline{3}_z]$$

$$\overline{3}_zm_x^{\prime*}$$

$$\overline{3}_zm_x(\overline{3}_z)\{\overline{3}_z\}$$

20.12(6)

$$\overline{3}_zm_x^{\prime}[3_zm_x^{\prime}]$$

$$\overline{3}_z^*m_x^{\prime}$$

$$\overline{3}_zm_x(\overline{3}_z)\{3_zm_x(3_z)\}$$

20.13(6)

$$\overline{3}_zm_x^{\prime}[3_z2_x^{\prime}]$$

$$\overline{3}_z^*m_x^{\prime*}$$

$$\overline{3}_zm_x(\overline{3}_z)\{3_z2_x(3_z)\}$$

$$20.14(5) \quad \overline{3}_z' m_x [3_z m_x]$$

$$\overline{3}_z' * m_x$$

$$\overline{3}_z m_x (3_z m_x) \{3_z m_x\}$$

$$20.15(6) \quad \overline{3}_z' m_x [\overline{3}_z']$$

$$\overline{3}_z' m_x *$$

$$\overline{3}_z m_x (3_z m_x) \{\overline{3}_z (3_z)\}$$

$$20.16(6) \quad \overline{3}_z' m_x [3_z 2_x']$$

$$\overline{3}_z' * m_x *$$

$$\overline{3}_z m_x (3_z m_x) \{3_z 2_x (3_z)\}$$

$$20.17(5) \quad \overline{3}_z' m_x' [3_z 2_x]$$

$$\overline{3}_z^{\prime *} m_x^{\prime *}$$

$$\overline{3}_z m_x(3_z 2_x) \{3_z 2_x\}$$

20.18(6)

$$\overline{3}_z^{\prime} m_x^{\prime} [\overline{3}_z^{\prime}]$$

$$\overline{3}_z^{\prime} m_x^{\prime *}$$

$$\overline{3}_z m_x(3_z 2_x) \{\overline{3}_z(3_z)\}$$

20.19(6)

$$\overline{3}_z^{\prime} m_x^{\prime} [3_z m_x^{\prime}]$$

$$\overline{3}_z^{\prime *} m_x^{\prime}$$

$$\overline{3}_z m_x(3_z 2_x) \{3_z m_x(3_z)\}$$

21) 6

21.1(1)

$6_z[3_z]$

6_z^*

$6_z\{3_z\}$

21.2(2)

$6_z1^l[6_z]$

6_z1^{l*}

6_z1^{l*}

21.3(3)

$6_z1^l[3_z1^l]$

$6_z^*1^l$

$6_z\{3_z\}1^l$

21.4(4)

$6_z1^l[6_z^l]$

$6_z^l1^{l*}$

$6_z(3_z)1^{l*}$

21.5(5)

$6_z^I[3_z]$

6_z^{I*}

$6_z(3_z)\{3_z\}$

22) $\overline{6}$

22.1(1) $\overline{6}_z[3_z]$

$\overline{6}_z^*$

$\overline{6}_z\{3_z\}$

22.2(2) $\overline{6}_z1'[\overline{6}_z]$

$\overline{6}_z1'^*$

$\overline{6}_z1'^*$

22.3(3) $\overline{6}_z1'[3_z1']$

$\overline{6}_z^*1'$

$\overline{6}_z\{3_z\}1'$

22.4(4) $\overline{6}_z1'[\overline{6}_z]$

$\overline{6}_z1'^*$

$\overline{6}_z(3_z)1'^*$

22.5(5)

$$\overline{6}_z[3_z]$$

$$\overline{6}_z^*$$

$$\overline{6}_z(3_z)\{3_z\}$$

23) 6/m

23.1(1)

$$6_z/m_z[6_z]$$

$$6_z/m_z^*$$

$$6_z/m_z\{6_z\}$$

23.2(1)

$$6_z/m_z[\overline{6}_z]$$

$$6_z^*/m_z$$

$$6_z/m_z\{\overline{6}_z\}$$

23.3(1)

$$6_z/m_z[\overline{3}_z]$$

$$6_z^*/m_z^*$$

$$6_z/m_z\{\overline{3}_z\}$$

23.4(2)

$$6_z/m_z1'[6_z/m_z]$$

$$6_z/m_z1'^*$$

$$6_z/m_z1'^*$$

$$23.5(3) \quad 6_z/m_z 1' [6_z 1']$$

$$6_z/m_z^* 1'$$

$$6_z/m_z \{6_z\} 1'$$

$$23.6(3) \quad 6_z/m_z 1' [\overline{6}_z 1']$$

$$6_z^*/m_z 1'$$

$$6_z/m_z \{\overline{6}_z\} 1'$$

$$23.7(3) \quad 6_z/m_z 1' [\overline{3}_z 1']$$

$$6_z^*/m_z^* 1'$$

$$6_z/m_z \{\overline{3}_z\} 1'$$

$$23.8(4) \quad 6_z/m_z 1' [6_z/m_z']$$

$$6_z/m_z' 1'^*$$

$$6_z/m_z (6_z) 1'^*$$

$$23.9(4) \quad 6_z/m_z 1' [6_z'/m_z]$$

$$6_z'/m_z 1'^*$$

$$6_z/m_z(\overline{6}_z) 1'^*$$

23.10(4)

$$6_z'/m_z 1' [6_z'/m_z']$$

$$6_z'/m_z 1'^*$$

$$6_z/m_z(\overline{3}_z) 1'^*$$

23.11(5)

$$6_z'/m_z' [6_z']$$

$$6_z'/m_z'^*$$

$$6_z/m_z(6_z)\{6_z\}$$

23.12(6)

$$6_z'/m_z' [\overline{6}_z']$$

$$6_z^*/m_z'$$

$$6_z/m_z(6_z)\{\overline{6}_z(3_z)\}$$

23.13(6)

$$6_z'/m_z' [\overline{3}_z']$$

$$6_z^*/m_z'^*$$

$$6_z/m_z(6_z)\{\overline{3}_z(3_z)\}$$

$$23.14(5) \quad 6_z'/m_z[\overline{6}_z]$$

$$6_z^{I*}/m_z$$

$$6_z/m_z(\overline{6}_z)\{\overline{6}_z\}$$

$$23.15(6) \quad 6_z'/m_z[6_z^I]$$

$$6_z^{I'}/m_z^*$$

$$6_z/m_z(\overline{6}_z)\{6_z(3_z)\}$$

$$23.16(6) \quad 6_z'/m_z[\overline{3}_z^I]$$

$$6_z^{I*}/m_z^*$$

$$6_z/m_z(\overline{6}_z)\{\overline{3}_z(3_z)\}$$

$$23.17(5) \quad 6_z'/m_z[\overline{3}_z]$$

$$6_z^{I*}/m_z^{I*}$$

$$6_z/m_z(\overline{3}_z)\{\overline{3}_z\}$$

23.18(6)

$$6_z^I/m_z^I[6_z^I]$$

$$6_z^I/m_z^{I*}$$

$$6_z/m_z(\overline{3}_z)\{6_z(3_z)\}$$

23.19(6)

$$6_z^I/m_z^I[\overline{6}_z^I]$$

$$6_z^{I*}/m_z^I$$

$$6_z/m_z(\overline{3}_z)\{\overline{6}_z(3_z)\}$$

24) 622

24.1(1) $6_z 2_x 2_1 [3_z 2_x]$

$6_z^* 2_x 2_1^*$

$6_z 2_x 2_1 \{3_z 2_x\}$

24.2(1) $6_z 2_x 2_1 [6_z]$

$6_z 2_x^* 2_1^*$

$6_z 2_x 2_1 \{6_z\}$

24.3(2) $6_z 2_x 2_1 1^i [6_z 2_x 2_1]$

$6_z 2_x 2_1 1^{i*}$

$6_z 2_x 2_1 1^{i*}$

24.4(3) $6_z 2_x 2_1 1^i [3_z 2_x 1^i]$

$6_z^* 2_x 2_1^* 1^i$

$6_z 2_x 2_1 \{3_z 2_x\} 1^i$

$$24.5(3) \quad 6_z 2_x 2_1 1^I [6_z 1^I]$$

$$6_z 2_x^* 2_1^* 1^I$$

$$6_z 2_x 2_1 \{6_z\} 1^I$$

$$24.6(4) \quad 6_z 2_x 2_1 1^I [6_z 2_x 2_1^I]$$

$$6_z^I 2_x 2_1^I 1^{I*}$$

$$6_z 2_x 2_1 (3_z 2_x) 1^{I*}$$

$$24.7(4) \quad 6_z 2_x 2_1 1^I [6_z 2_x^I 2_1^I]$$

$$6_z 2_x^I 2_1^I 1^{I*}$$

$$6_z 2_x 2_1 (6_z) 1^{I*}$$

$$24.8(5) \quad 6_z^I 2_x 2_1^I [3_z 2_x]$$

$$6_z^I 2_x^* 2_1^I 1^{I*}$$

$$6_z 2_x 2_1 (3_z 2_x) \{3_z 2_x\}$$

$$24.9(6) \quad 6_z^{\prime} 2_x 2_1^{\prime} [3_z 2_1^{\prime}]$$

$$6_z^{\prime} * 2_x * 2_1^{\prime} \quad 6_z 2_x 2_1 (3_z 2_x) \{3_z 2_1 (3_z)\}$$

$$24.10(6) \quad 6_z^{\prime} 2_x 2_1^{\prime} [6_z^{\prime}]$$

$$6_z^{\prime} 2_x * 2_1^{*} \quad 6_z 2_x 2_1 (3_z 2_x) \{6_z (3_z)\}$$

$$24.11(5) \quad 6_z 2_x^{\prime} 2_1^{\prime} [6_z]$$

$$6_z 2_x^{\prime} * 2_1^{*} \quad 6_z 2_x 2_1 (6_z) \{6_z\}$$

$$24.12(6) \quad 6_z 2_x^{\prime} 2_1^{\prime} [3_z 2_x^{\prime}]$$

$$6_z * 2_x^{\prime} 2_1^{*} \quad 6_z 2_x 2_1 (6_z) \{3_z 2_x (3_z)\}$$

25) 6mm

25.1(1) $6_z m_x m_1 [3_z m_x]$

$6_z^* m_x m_1^*$

$6_z m_x m_1 \{3_z m_x\}$

25.2(1) $6_z m_x m_1 [6_z]$

$6_z m_x^* m_1^*$

$6_z m_x m_1 \{6_z\}$

25.3(2) $6_z m_x m_1 1' [6_z m_x m_1]$

$6_z m_x m_1 1'^*$

$6_z m_x m_1 1'^*$

25.4(3) $6_z m_x m_1 1' [3_z m_x 1']$

$6_z^* m_x m_1^* 1'$

$6_z m_x m_1 \{3_z m_x\} 1'$

$$25.5(3) \quad 6_z m_x m_1 1' [6_z 1']$$

$$6_z m_x^* m_1^* 1'$$

$$6_z m_x m_1 \{6_z\} 1'$$

$$25.6(4) \quad 6_z m_x m_1 1' [6_z' m_x m_1']$$

$$6_z' m_x m_1' 1'^*$$

$$6_z m_x m_1 (3_z m_x) 1'^*$$

$$25.7(4) \quad 6_z m_x m_1 1' [6_z m_x' m_1']$$

$$6_z m_x' m_1' 1'^*$$

$$6_z m_x m_1 (6_z) 1'^*$$

$$25.8(5) \quad 6_z' m_x m_1' [3_z m_x]$$

$$6_z'^* m_x m_1'^*$$

$$6_z m_x m_1 (3_z m_x) \{3_z m_x\}$$

$$25.9(6) \quad 6_z^{\perp} m_x m_1^{\perp} [3_z m_1^{\perp}]$$

$$6_z^{\perp *} m_x^* m_1^{\perp}$$

$$6_z m_x m_1 (3_z m_x) \{3_z m_1 (3_z)\}$$

$$25.10(6) \quad 6_z^{\perp} m_x m_1^{\perp} [6_z^{\perp}]$$

$$6_z^{\perp} m_x^* m_1^{\perp *}$$

$$6_z m_x m_1 (3_z m_x) \{6_z (3_z)\}$$

$$25.11(5) \quad 6_z m_x^{\perp} m_1^{\perp} [6_z]$$

$$6_z m_x^{\perp *} m_1^{\perp *}$$

$$6_z m_x m_1 (6_z) \{6_z\}$$

$$25.12(6) \quad 6_z m_x^{\perp} m_1^{\perp} [3_z m_x^{\perp}]$$

$$6_z^* m_x^{\perp} m_1^{\perp *}$$

$$6_z m_x m_1 (6_z) \{3_z m_x (3_z)\}$$

26) $\overline{6}m2$

26.1(1) $\overline{6}_z m_x 2_1 [3_z 2_1]$

$\overline{6}_z^* m_x^* 2_1$

$\overline{6}_z m_x 2_1 \{3_z 2_1\}$

26.2(1) $\overline{6}_z m_x 2_1 [3_z m_x]$

$\overline{6}_z^* m_x 2_1^*$

$\overline{6}_z m_x 2_1 \{3_z m_x\}$

26.3(1) $\overline{6}_z m_x 2_1 [\overline{6}_z]$

$\overline{6}_z m_x^* 2_1^*$

$\overline{6}_z m_x 2_1 \{\overline{6}_z\}$

26.4(2) $\overline{6}_z m_x 2_1 1' [\overline{6}_z m_x 2_1]$

$\overline{6}_z m_x 2_1 1'^*$

$\overline{6}_z m_x 2_1 1'^*$

$$26.5(3) \quad \overline{6}_z m_x 2_1 1' [3_2 2_1 1']$$

$$\overline{6}_z^* m_x^* 2_1 1'$$

$$\overline{6}_z m_x 2_1 \{3_2 2_1\} 1'$$

$$26.6(3) \quad \overline{6}_z m_x 2_1 1' [3_z m_x 1']$$

$$\overline{6}_z^* m_x 2_1^* 1'$$

$$\overline{6}_z m_x 2_1 \{3_z m_x\} 1'$$

$$26.7(3) \quad \overline{6}_z m_x 2_1 1' [\overline{6}_z 1']$$

$$\overline{6}_z m_x^* 2_1^* 1'$$

$$\overline{6}_z m_x 2_1 \{\overline{6}_z\} 1'$$

$$26.8(4) \quad \overline{6}_z m_x 2_1 1' [\overline{6}_z' m_x' 2_1]$$

$$\overline{6}_z' m_x' 2_1 1'^*$$

$$\overline{6}_z m_x 2_1 (3_2 2_1) 1'^*$$

$$26.9(4) \quad \overline{6}_z m_x 2_1 1' [\overline{6}_z' m_x' 2_1']$$

$$\overline{6}_z' m_x 2_1' 1'^*$$

$$\overline{6}_z m_x 2_1 (3_z m_x) 1'^*$$

26.10(4)

$$\overline{6}_z m_x 2_1 1' [\overline{6}_z m_x' 2_1']$$

$$\overline{6}_z m_x' 2_1' 1'^*$$

$$\overline{6}_z m_x 2_1 (\overline{6}_z) 1'^*$$

26.11(5)

$$\overline{6}_z' m_x 2_1' [3_z m_x]$$

$$\overline{6}_z'^* m_x 2_1'^*$$

$$\overline{6}_z m_x 2_1 (3_z m_x) \{3_z m_x\}$$

26.12(6)

$$\overline{6}_z' m_x 2_1' [3_z 2_1']$$

$$\overline{6}_z'^* m_x^* 2_1'$$

$$\overline{6}_z m_x 2_1 (3_z m_x) \{3_z 2_1 (3_z)\}$$

26.13(6)

$$\overline{6}_z' m_x 2_1' [\overline{6}_z']$$

$$\overline{6}_z' m_x^* 2_1'^*$$

$$\overline{6}_z m_x 2_1 (3_z m_x) \{\overline{6}_z (3_z)\}$$

$$26.14(5) \quad \overline{6}_z' m_x' 2_1 [3_z 2_1]$$

$$\overline{6}_z^* m_x' 2_1^*$$

$$\overline{6}_z m_x 2_1 (3_z 2_1) \{3_z 2_1\}$$

$$26.15(6) \quad \overline{6}_z' m_x' 2_1 [3_z m_x']$$

$$\overline{6}_z^* m_x' 2_1^*$$

$$\overline{6}_z m_x 2_1 (3_z 2_1) \{3_z m_x (3_z)\}$$

$$26.16(6) \quad \overline{6}_z' m_x' 2_1 [\overline{6}_z']$$

$$\overline{6}_z' m_x' 2_1^*$$

$$\overline{6}_z m_x 2_1 (3_z 2_1) \{\overline{6}_z (3_z)\}$$

$$26.17(5) \quad \overline{6}_z m_x' 2_1' [\overline{6}_z]$$

$$\overline{6}_z m_x' 2_1'^*$$

$$\overline{6}_z m_x 2_1(\overline{6}_z)\{\overline{6}_z\}$$

26.18(6)

$$\overline{6}_z m_x' 2_1'[3_z m_x']$$

$$\overline{6}_z^* m_x' 2_1'^*$$

$$\overline{6}_z m_x 2_1(\overline{6}_z)\{3_z m_x(3_x)\}$$

26.19(6)

$$\overline{6}_z m_x' 2_1'[3_z 2_1']$$

$$\overline{6}_z^* m_x' 2_1'^*$$

$$\overline{6}_z m_x 2_1(\overline{6}_z)\{3_z 2_1(3_z)\}$$

27) 6/mmm

$$27.1(1) \quad 6_z/m_z m_x m_1 [\bar{3}_z m_x]$$

$$6_z^*/m_z^* m_x m_1^*$$

$$6_z/m_z m_x m_1 \{ \bar{3}_z m_x \}$$

$$27.2(1) \quad 6_z/m_z m_x m_1 [6_z/m_z]$$

$$6_z/m_z m_x^* m_1^*$$

$$6_z/m_z m_x m_1 \{ 6_z/m_z \}$$

$$27.3(1) \quad 6_z/m_z m_x m_1 [6_z 2_x 2_1]$$

$$6_z/m_z^* m_x^* m_1^*$$

$$6_z/m_z m_x m_1 \{ 6_z 2_x 2_1 \}$$

$$27.4(1) \quad 6_z/m_z m_x m_1 [6_z m_x m_1]$$

$$6_z/m_z^* m_x m_1$$

$$6_z/m_z m_x m_1 \{ 6_z m_x m_1 \}$$

$$27.5(1) \quad 6_z/m_z m_x m_1 [\overline{6}_z m_x 2_1]$$

$$6_z^*/m_z m_x m_1^*$$

$$6_z/m_z m_x m_1 \{\overline{6}_z m_x 2_1\}$$

$$27.6(2) \quad 6_z/m_z m_x m_1 1' [6_z/m_z m_x m_1]$$

$$6_z/m_z m_x m_1 1'^*$$

$$6_z/m_z m_x m_1 1'^*$$

$$27.7(3) \quad 6_z/m_z m_x m_1 1' [\overline{3}_z m_x 1']$$

$$6_z^*/m_z^* m_x m_1^* 1'$$

$$6_z/m_z m_x m_1 \{\overline{3}_z m_x\} 1'$$

$$27.8(3) \quad 6_z/m_z m_x m_1 1' [6_z/m_z 1']$$

$$6_z/m_z m_x^* m_1^* 1'$$

$$6_z/m_z m_x m_1 \{6_z/m_z\} 1'$$

$$27.9(3) \quad 6_z/m_z m_x m_1 1' [6_z 2_x 2_1 1']$$

$$6_z/m_z^*m_x^*m_1^*1^i$$

$$6_z/m_zm_xm_1\{6_z2_x2_1\}1^i$$

27.10(3)

$$6_z/m_zm_xm_11^i[6_zm_xm_11^i]$$

$$6_z/m_z^*m_xm_11^i$$

$$6_z/m_zm_xm_1\{6_zm_xm_1\}1^i$$

27.11(3)

$$6_z/m_zm_xm_11^i[\overline{6}_zm_x2_11^i]$$

$$6_z^*/m_zm_xm_1^*1^i$$

$$6_z/m_zm_xm_1\{\overline{6}_zm_x2_1\}1^i$$

27.12(4)

$$6_z/m_zm_xm_11^i[6_z^i/m_z^im_xm_1^i]$$

$$6_z^i/m_z^im_xm_1^i1^{i*}$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)1^{i*}$$

27.13(4)

$$6_z/m_zm_xm_11^i[6_z/m_zm_x^im_1^i]$$

$$6_z/m_zm_x^im_1^i1^{i*}$$

$$6_z/m_zm_xm_1(6_z/m_z)1^{i*}$$

$$27.14(4) \quad 6_z/m_z m_x m_1 1' [6_z/m_z' m_x' m_1']$$

$$6_z/m_z' m_x' m_1' 1'^* \quad 6_z/m_z m_x m_1 (6_z 2_x 2_1) 1'^*$$

$$27.15(4) \quad 6_z/m_z m_x m_1 1' [6_z/m_z' m_x m_1]$$

$$6_z/m_z' m_x m_1 1'^* \quad 6_z/m_z m_x m_1 (6_z m_x m_1) 1'^*$$

$$27.16(4) \quad 6_z/m_z m_x m_1 1' [6_z'/m_z m_x m_1']$$

$$6_z'/m_z m_x m_1' 1'^* \quad 6_z/m_z m_x m_1 (\overline{6}_z m_x 2_1) 1'^*$$

$$27.17(5) \quad 6_z'/m_z' m_x m_1' [\overline{3}_z m_x]$$

$$6_z'^*/m_z'^* m_x m_1'^* \quad 6_z/m_z m_x m_1 (\overline{3}_z m_x) \{\overline{3}_z m_x\}$$

$$27.18(6) \quad 6_z'/m_z'm_xm_1'[\overline{3}_zm_1']$$

$$6_z^{i*}/m_z^{i*}m_x^*m_1^i$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{\overline{3}_zm_1(\overline{3}_z)\}$$

$$27.19(6) \quad 6_z'/m_z'm_xm_1'[6_z'/m_z']$$

$$6_z^i/m_z^im_x^*m_1^{i*}$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{6_z/m_z(\overline{3}_z)\}$$

$$27.20(6) \quad 6_z'/m_z'm_xm_1'[6_z'2_x2_1']$$

$$6_z^i/m_z^{i*}m_x^*m_1^{i*}$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{6_z2_x2_1(3_z2_x)\}$$

$$27.21(6) \quad 6_z^i/m_z^im_xm_1'[6_z^im_xm_1']$$

$$6_z'/m_z'^*m_xm_1'$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{6_zm_xm_1(3_zm_x)\}$$

27.22(6)

$$6_z'/m_z'm_xm_1'[\overline{6}_z'm_x2_1']$$

$$6_z'^*/m_z'm_xm_1'^*$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{\overline{6}_zm_x2_1(3_zm_x)\}$$

27.23(6)

$$6_z'/m_z'm_xm_1'[\overline{6}_z'2_xm_1']$$

$$6_z'^*/m_z'm_x^*m_1'$$

$$6_z/m_zm_xm_1(\overline{3}_zm_x)\{\overline{6}_z2_xm_1(3_z2_x)\}$$

27.24(5)

$$6_z/m_zm_x'm_1'[6_z/m_z]$$

$$6_z/m_zm_x'^*m_1'^*$$

$$6_z/m_zm_xm_1(6_z/m_z)\{6_z/m_z\}$$

27.25(6)

$$6_z/m_zm_x'm_1'[\overline{3}_zm_x']$$

$$6_z^*/m_z^*m_x^{\prime}m_1^{\prime*}$$

$$6_z/m_zm_xm_1(6_z/m_z)\{\overline{3}_zm_x(\overline{3}_z)\}$$

27.26(6)

$$6_z/m_zm_x^{\prime}m_1^{\prime}[6_z2_x^{\prime}2_1^{\prime}]$$

$$6_z/m_z^*m_x^{\prime*}m_1^{\prime*}$$

$$6_z/m_zm_xm_1(6_z/m_z)\{6_z2_x2_1(6_z)\}$$

27.27(6)

$$6_z/m_zm_x^{\prime}m_1^{\prime}[6_zm_x^{\prime}m_1^{\prime}]$$

$$6_z/m_z^*m_x^{\prime}m_1^{\prime}$$

$$6_z/m_zm_xm_1(6_z/m_z)\{6_zm_xm_1(6_z)\}$$

27.28(6)

$$6_z/m_zm_x^{\prime}m_1^{\prime}[\overline{6}_zm_x^{\prime}2_1^{\prime}]$$

$$6_z^*/m_zm_x^{\prime}m_1^{\prime*}$$

$$6_z/m_zm_xm_1(6_z/m_z)\{\overline{6}_zm_x2_1(\overline{6}_z)\}$$

$$27.29(5) \quad 6_z/m_z^{\perp}m_x^{\perp}m_1^{\perp}[6_22_1]$$

$$6_z/m_z^{\perp*}m_x^{\perp*}m_1^{\perp*}$$

$$6_z/m_zm_xm_1(6_22_1)\{6_22_1\}$$

$$27.30(6) \quad 6_z/m_z^{\perp}m_x^{\perp}m_1^{\perp}[\overline{3}_z^{\perp}m_x^{\perp}]$$

$$6_z^*/m_z^{\perp*}m_x^{\perp*}m_1^{\perp*}$$

$$6_z/m_zm_xm_1(6_22_1)\{\overline{3}_zm_x(3_22_x)\}$$

$$27.31(6) \quad 6_z/m_z^{\perp}m_x^{\perp}m_1^{\perp}[6_z/m_z^{\perp}]$$

$$6_z/m_z^{\perp}m_x^{\perp*}m_1^{\perp*}$$

$$6_z/m_zm_xm_1(6_22_1)\{6_z/m_z(6_z)\}$$

$$27.32(6) \quad 6_z/m_z^{\perp}m_x^{\perp}m_1^{\perp}[6_zm_x^{\perp}m_1^{\perp}]$$

$$6_z/m_z^{\perp*}m_x^{\perp*}m_1^{\perp}$$

$$6_z/m_zm_xm_1(6_22_1)\{6_zm_xm_1(6_z)\}$$

$$27.33(6) \quad 6_z/m_z^{\perp}m_x^{\perp}m_1^{\perp}[\overline{6}_z^{\perp}m_x^{\perp}2_1]$$

$$6_z^*/m_z^{\prime}m_x^{\prime}m_1^{\prime*}$$

$$6_z/m_zm_xm_1(6_z2_x2_1)\{\overline{6}_zm_x2_1(3_z2_1)\}$$

27.34(5)

$$6_z/m_z^{\prime}m_xm_1[6_zm_xm_1]$$

$$6_z/m_z^{\prime*}m_xm_1$$

$$6_z/m_zm_xm_1(6_zm_xm_1)\{6_zm_xm_1\}$$

27.35(6)

$$6_z/m_z^{\prime}m_xm_1[\overline{3}_zm_x]$$

$$6_z^*/m_z^{\prime*}m_xm_1^*$$

$$6_z/m_zm_xm_1(6_zm_xm_1)\{\overline{3}_zm_x(3_zm_x)\}$$

27.36(6)

$$6_z/m_z^{\prime}m_xm_1[6_z/m_z^{\prime}]$$

$$6_z/m_z^{\prime}m_x^*m_1^*$$

$$6_z/m_zm_xm_1(6_zm_xm_1)\{6_z/m_z(6_z)\}$$

$$27.37(6) \quad 6_z/m_z^{\perp}m_xm_1[6_z2_x^{\perp}2_1^{\perp}]$$

$$6_z/m_z^{\perp*}m_x^*m_1^*$$

$$6_z/m_zm_xm_1(6_zm_xm_1)\{6_z2_x2_1(6_z)\}$$

$$27.38(6) \quad 6_z/m_z^{\perp}m_xm_1[\overline{6}_z^{\perp}m_x2_1^{\perp}]$$

$$6_z^*/m_z^{\perp}m_xm_1^*$$

$$6_z/m_zm_xm_1(6_zm_xm_1)\{\overline{6}_zm_x2_1(3_zm_x)\}$$

$$27.39(5) \quad 6_z^{\perp}/m_zm_xm_1^{\perp}[\overline{6}_zm_x2_1]$$

$$6_z^{\perp*}/m_zm_xm_1^{\perp*}$$

$$6_z/m_zm_xm_1(\overline{6}_zm_x2_1)\{\overline{6}_zm_x2_1\}$$

$$27.40(6) \quad 6_z^{\perp}/m_zm_xm_1^{\perp}[\overline{3}_z^{\perp}m_x]$$

$$6_z^{\perp*}/m_z^*m_xm_1^{\perp*}$$

$$6_z/m_zm_xm_1(\overline{6}_zm_x2_1)\{\overline{3}_zm_x(3_zm_x)\}$$

$$27.41(6) \quad 6_z'/m_z m_x m_1' [\overline{3}_z' m_1']$$

$$6_z'^*/m_z^* m_x^* m_1' \quad 6_z/m_z m_x m_1 (\overline{6}_z m_x 2_1) \{ \overline{3}_z m_1 (3_z 2_1) \}$$

$$27.42(6) \quad 6_z'/m_z m_x m_1' [6_z'/m_z]$$

$$6_z'/m_z m_x^* m_1'^* \quad 6_z/m_z m_x m_1 (\overline{6}_z m_x 2_1) \{ 6_z'/m_z (\overline{6}_z) \}$$

$$27.43(6) \quad 6_z'/m_z m_x m_1' [6_z' 2_x' 2_1]$$

$$6_z'/m_z^* m_x^* m_1'^* \quad 6_z/m_z m_x m_1 (\overline{6}_z m_x 2_1) \{ 6_z 2_x 2_1 (3_z 2_1) \}$$

$$27.44(6) \quad 6_z'/m_z m_x m_1' [6_z' m_x m_1']$$

$$6_z'/m_z^* m_x m_1' \quad 6_z/m_z m_x m_1 (\overline{6}_z m_x 2_1) \{ 6_z m_x m_1 (3_z m_x) \}$$

$$27.45(6) \quad 6_z'/m_z m_x m_1' [\overline{6}_z 2_x' m_1']$$

$$6_z^{[*]}/m_z m_x^{[*]} m_1^{[*]}$$

$$6_z/m_z m_x m_1(\overline{6}_z m_x 2_1)\{\overline{6}_z 2_x m_1(\overline{6}_z)\}$$

28) 23

28.1(2)

$$2_z\overline{3}_{xyz}1'[2_z\overline{3}_{xyz}]$$

$$2_z\overline{3}_{xyz}1'^*$$

$$2_z\overline{3}_{xyz}1'^*$$

29) $m\overline{3}$

29.1(1)

$$m_z\overline{3}_{xyz}[2_z\overline{3}_{xyz}]$$

$$m_z^*\overline{3}_{xyz}^*$$

$$m_z\overline{3}_{xyz}\{2_z\overline{3}_{xyz}\}$$

29.2(2)

$$m_z\overline{3}_{xyz}1'[m_z\overline{3}_{xyz}]$$

$$m_z\overline{3}_{xyz}1'^*$$

$$m_z\overline{3}_{xyz}1'^*$$

$$29.3(3) \quad m_z \overline{3}_{xyz} 1' [2_z 3_{xyz} 1']$$

$$m_z^* \overline{3}_{xyz}^* 1'$$

$$m_z \overline{3}_{xyz} \{2_z 3_{xyz}\} 1'$$

$$29.4(4) \quad m_z \overline{3}_{xyz} 1' [m_z \overline{3}_{xyz} 1']$$

$$m_z \overline{3}_{xyz} 1'^*$$

$$m_z \overline{3}_{xyz} (2_z 3_{xyz}) 1'^*$$

$$29.5(5) \quad m_z \overline{3}_{xyz} [2_z 3_{xyz}]$$

$$m_z^* \overline{3}_{xyz}^*$$

$$m_z \overline{3}_{xyz} (2_z 3_{xyz}) \{2_z 3_{xyz}\}$$

30) 432

30.1(1)

$$4_z 3_{xyz} 2_{xy} [2_z 3_{xyz}]$$

$$4_z^* 3_{xyz} 2_{xy}^*$$

$$4_z 3_{xyz} 2_{xy} \{2_z 3_{xyz}\}$$

30.2(2)

$$4_z 3_{xyz} 2_{xy} 1^i [4_z 3_{xyz} 2_{xy}]$$

$$4_z 3_{xyz} 2_{xy} 1^{i*}$$

$$4_z 3_{xyz} 2_{xy} 1^{i*}$$

30.3(3)

$$4_z 3_{xyz} 2_{xy} 1^i [2_z 3_{xyz} 1^i]$$

$$4_z^* 3_{xyz} 2_{xy}^* 1^i$$

$$4_z 3_{xyz} 2_{xy} \{2_z 3_{xyz}\} 1^i$$

30.4(4)

$$4_z 3_{xyz} 2_{xy} 1^i [4_z^i 3_{xyz} 2_{xy}^i]$$

$$4_z^i 3_{xyz} 2_{xy}^i 1^{i*}$$

$$4_z 3_{xyz} 2_{xy} (2_z 3_{xyz}) 1^{i*}$$

30.5(5)

$$4_z^I 3_{xyz} 2_{xy}^I [2_z 3_{xyz}]$$

$$4_z^{I*} 3_{xyz} 2_{xy}^{I*}$$

$$4_z 3_{xyz} 2_{xy} (2_z 3_{xyz}) \{2_z 3_{xyz}\}$$

31) $\overline{4}3m$

$$31.1(1) \quad \overline{4}_z 3_{xyz} m_{xy} [2_3 3_{xyz}]$$

$$\overline{4}_z^* 3_{xyz} m_{xy}^*$$

$$\overline{4}_z 3_{xyz} m_{xy} \{2_3 3_{xyz}\}$$

$$31.2(2) \quad \overline{4}_z 3_{xyz} m_{xy} 1^i [\overline{4}_z 3_{xyz} m_{xy}]$$

$$\overline{4}_z 3_{xyz} m_{xy} 1^{i*}$$

$$\overline{4}_z 3_{xyz} m_{xy} 1^{i*}$$

$$31.3(3) \quad \overline{4}_z 3_{xyz} m_{xy} 1^i [2_3 3_{xyz} 1^i]$$

$$\overline{4}_z^* 3_{xyz} m_{xy}^* 1^i$$

$$\overline{4}_z 3_{xyz} m_{xy} \{2_3 3_{xyz}\} 1^i$$

$$31.4(4) \quad \overline{4}_z 3_{xyz} m_{xy} 1^i [\overline{4}_z 3_{xyz} m_{xy} 1^i]$$

$$\overline{4}_z 3_{xyz} m_{xy} 1^{i*}$$

$$\overline{4}_z 3_{xyz} m_{xy} (2_3 3_{xyz}) 1^{i*}$$

31.5(5)

$$\overline{4}_z^I 3_{xyz} m_{xy}^I [2_3 3_{xyz}]$$

$$\overline{4}_z^I * 3_{xyz} m_{xy}^{I*}$$

$$\overline{4}_z 3_{xyz} m_{xy} (2_3 3_{xyz}) \{2_3 3_{xyz}\}$$

32) $m\bar{3}m$

$$32.1(1) \quad m_z \bar{3}_{xyz} m_{xy} [m_z \bar{3}_{xyz}]$$

$$m_z \bar{3}_{xyz} m_{xy}^*$$

$$m_z \bar{3}_{xyz} m_{xy} \{m_z \bar{3}_{xyz}\}$$

$$32.2(1) \quad m_z \bar{3}_{xyz} m_{xy} [\bar{4}_z 3_{xyz} m_{xy}]$$

$$m_z^* \bar{3}_{xyz}^* m_{xy}$$

$$m_z \bar{3}_{xyz} m_{xy} \{\bar{4}_z 3_{xyz} m_{xy}\}$$

$$32.3(1) \quad m_z \bar{3}_{xyz} m_{xy} [4_3 3_{xyz} 2_{xy}]$$

$$m_z^* \bar{3}_{xyz}^* m_{xy}^*$$

$$m_z \bar{3}_{xyz} m_{xy} \{4_3 3_{xyz} 2_{xy}\}$$

$$32.4(2) \quad m_z \bar{3}_{xyz} m_{xy} 1' [m_z \bar{3}_{xyz} m_{xy}]$$

$$m_z \bar{3}_{xyz} m_{xy} 1'^*$$

$$m_z \bar{3}_{xyz} m_{xy} 1'^*$$

$$32.5(3) \quad m_z \overline{3}_{xyz} m_{xy} 1' [m_z \overline{3}_{xyz} 1']$$

$$m_z \overline{3}_{xyz} m_{xy}^* 1' \quad m_z \overline{3}_{xyz} m_{xy} \{m_z \overline{3}_{xyz}\} 1'$$

$$32.6(3) \quad m_z \overline{3}_{xyz} m_{xy} 1' [\overline{4}_z 3_{xyz} m_{xy} 1']$$

$$m_z^* \overline{3}_{xyz}^* m_{xy} 1' \quad m_z \overline{3}_{xyz} m_{xy} \{\overline{4}_z 3_{xyz} m_{xy}\} 1'$$

$$32.7(3) \quad m_z \overline{3}_{xyz} m_{xy} 1' [4_z 3_{xyz} 2_{xy} 1']$$

$$m_z^* \overline{3}_{xyz}^* m_{xy}^* 1' \quad m_z \overline{3}_{xyz} m_{xy} \{4_z 3_{xyz} 2_{xy}\} 1'$$

$$32.8(4) \quad m_z \overline{3}_{xyz} m_{xy} 1' [m_z \overline{3}_{xyz} m_{xy}']$$

$$m_z \overline{3}_{xyz} m_{xy}' 1'^* \quad m_z \overline{3}_{xyz} m_{xy} (m_z \overline{3}_{xyz}) 1'^*$$

$$32.9(4) \quad m_z \overline{3}_{xyz} m_{xy} 1' [m_z' \overline{3}_{xyz}' m_{xy}]$$

$$m_z \bar{3}_{xyz} m_{xy} 1^*$$

$$m_z \bar{3}_{xyz} m_{xy} (\bar{4}_z 3_{xyz} m_{xy}) 1^*$$

32.10(4)

$$m_z \bar{3}_{xyz} m_{xy} 1^* [m_z \bar{3}_{xyz} m_{xy}]$$

$$m_z \bar{3}_{xyz} m_{xy} 1^*$$

$$m_z \bar{3}_{xyz} m_{xy} (4_z 3_{xyz} 2_{xy}) 1^*$$

32.11(5)

$$m_z \bar{3}_{xyz} m_{xy} [m_z \bar{3}_{xyz}]$$

$$m_z \bar{3}_{xyz} m_{xy}^*$$

$$m_z \bar{3}_{xyz} m_{xy} (m_z \bar{3}_{xyz}) \{m_z \bar{3}_{xyz}\}$$

32.12(6)

$$m_z \bar{3}_{xyz} m_{xy} [4_z \bar{3}_{xyz} 2_{xy}]$$

$$m_z^* \bar{3}_{xyz}^* m_{xy}^*$$

$$m_z \bar{3}_{xyz} m_{xy} (m_z \bar{3}_{xyz}) \{4_z 3_{xyz} 2_{xy} (2_z 3_{xyz})\}$$

32.13(6)

$$m_z \bar{3}_{xyz} m_{xy} [\bar{4}_z \bar{3}_{xyz} m_{xy}]$$

$$m_z^* \bar{3}_{xyz}^* m_{xy}^*$$

$$m_z \bar{3}_{xyz} m_{xy} (m_z \bar{3}_{xyz}) \{\bar{4}_z 3_{xyz} m_{xy} (2_z 3_{xyz})\}$$

$$32.14(5) \quad m_z \bar{3}_{xyz} m_{xy} [4_3 2_{xy}]$$

$$m_z \bar{3}_{xyz} m_{xy} (4_3 2_{xy}) \{4_3 2_{xy}\}$$

$$32.15(6) \quad m_z \bar{3}_{xyz} m_{xy} [m_z \bar{3}_{xyz}]$$

$$m_z \bar{3}_{xyz} m_{xy} (m_z \bar{3}_{xyz}) \{m_z \bar{3}_{xyz}\}$$

$$32.16(6) \quad m_z \bar{3}_{xyz} m_{xy} [\bar{4}_3 3_{xyz} m_{xy}]$$

$$m_z \bar{3}_{xyz} m_{xy} (\bar{4}_3 3_{xyz} m_{xy}) \{\bar{4}_3 3_{xyz} m_{xy}\}$$

$$32.17(5) \quad m_z \bar{3}_{xyz} m_{xy} [\bar{4}_3 3_{xyz} m_{xy}]$$

$$m_z^{'*} \overline{3}_{xyz}^{'*} m_{xy} \qquad m_z \overline{3}_{xyz} m_{xy} (\overline{4}_z 3_{xyz} m_{xy}) \{ \overline{4}_z 3_{xyz} m_{xy} \}$$

$$32.18(6) \qquad m_z^{'*} \overline{3}_{xyz}^{'*} m_{xy} [m_z^{'*} \overline{3}_{xyz}^{'*}]$$

$$m_z^{'*} \overline{3}_{xyz}^{'*} m_{xy}^* \qquad m_z \overline{3}_{xyz} m_{xy} (\overline{4}_z 3_{xyz} m_{xy}) \{ m_z \overline{3}_{xyz} (2_3 3_{xyz}) \}$$

$$32.19(6) \qquad m_z^{'*} \overline{3}_{xyz}^{'*} m_{xy} [4_z^{'*} 3_{xyz} 2_{xy}^{'*}]$$

$$m_z^{'*} \overline{3}_{xyz}^{'*} m_{xy}^* \qquad m_z \overline{3}_{xyz} m_{xy} (\overline{4}_z 3_{xyz} m_{xy}) \{ 4_z 3_{xyz} 2_{xy} (2_3 3_{xyz}) \}$$

