# Simple Cubic $C_{60}$ Buckminsterfullerene Structure: A_cP240_205_10d-001

This structure previously used the label(s) `A_cP240_205_10d`. Calls to these addresses will be redirected here.

Cite this page as:


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- D. Hicks, M. J. Mehl, M. Esters, C. Oses, O. Levy, G. L. W. Hart, C. Toher, and S. Curtarolo, *The AFLOW Library of Crystallographic Prototypes: Part 3*, Comput. Mater. Sci. **199**, 110450 (2021), doi: 10.1016/j.commatsci.2021.110450.


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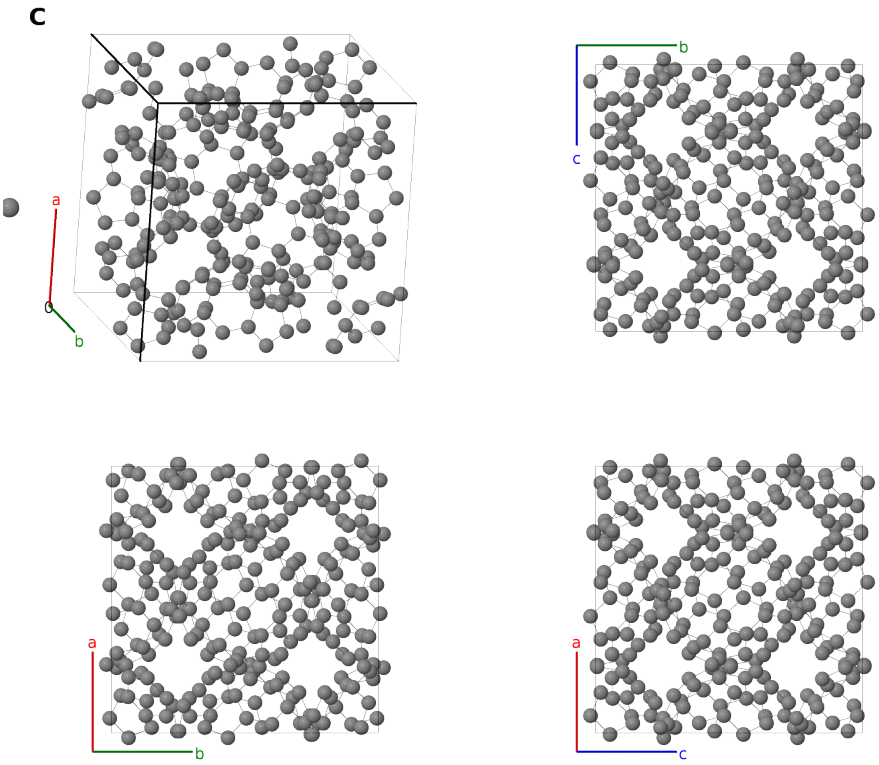
https://aflow.org/prototype-encyclopedia/3VYE

https://aflow.org/prototype-encyclopedia/A_cP240_205_10d-001




| | |
|---|---|
| **Prototype** | C |
| **AFLOW prototype label** | A_cP240_205_10d-001 |
| **Mineral name** | buckminsterfullerene |
| **ICSD** | 66729 |
| **CCDC** | 1628792 |
| **Pearson symbol** | cP240 |
| **Space group number** | 205 |
| **Space group symbol** | $Pa\bar{3}$ |

**AFLOW prototype command** `aflow --proto=A_cP240_205_10d-001 --params=`$a, x_1, y_1, z_1, x_2, y_2, z_2, x_3, y_3, z_3, x_4, y_4, z_4, x_5, y_5, z_5, x_6, y_6, z_6, x_7, y_7, z_7, x_8, y_8, z_8, x_9, y_9, z_9, x_{10}, y_{10}, z_{10}$

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- This is the experimentally determined structure of $C_{60}$ buckminsterfullerene (*aka* "buckyballs") below 249K. Above that temperature the $C_{60}$ molecules are orientationally disordered and set on a face-centered cubic lattice. For computational purposes that structure is approximated by the FCC $C_{60}$ buckminsterfullerene structure.
- Carbon can also be found in nature as graphite ($A9$), cubic diamond ($A4$), and lonsdaleite (hexagonal diamond).

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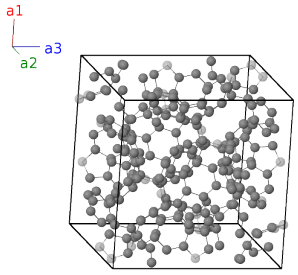
**Simple Cubic primitive vectors**

$$\mathbf{a_1} = a\,\hat{\mathbf{x}}$$
$$\mathbf{a_2} = a\,\hat{\mathbf{y}}$$
$$\mathbf{a_3} = a\,\hat{\mathbf{z}}$$

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**Basis vectors**

| | | Lattice coordinates | | Cartesian coordinates | Wyckoff position | Atom type |
|---|---|---|---|---|---|---|
| $\mathbf{B_1}$ | = | $x_1\,\mathbf{a}_1 + y_1\,\mathbf{a}_2 + z_1\,\mathbf{a}_3$ | = | $ax_1\,\hat{\mathbf{x}} + ay_1\,\hat{\mathbf{y}} + az_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_2}$ | = | $-\left(x_1 - \frac{1}{2}\right)\,\mathbf{a}_1 - y_1\,\mathbf{a}_2 + \left(z_1 + \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-a\left(x_1 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - ay_1\,\hat{\mathbf{y}} + a\left(z_1 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_3}$ | = | $-x_1\,\mathbf{a}_1 + \left(y_1 + \frac{1}{2}\right)\,\mathbf{a}_2 - \left(z_1 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-ax_1\,\hat{\mathbf{x}} + a\left(y_1 + \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(z_1 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_4}$ | = | $\left(x_1 + \frac{1}{2}\right)\,\mathbf{a}_1 - \left(y_1 - \frac{1}{2}\right)\,\mathbf{a}_2 - z_1\,\mathbf{a}_3$ | = | $a\left(x_1 + \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(y_1 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - az_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_5}$ | = | $z_1\,\mathbf{a}_1 + x_1\,\mathbf{a}_2 + y_1\,\mathbf{a}_3$ | = | $az_1\,\hat{\mathbf{x}} + ax_1\,\hat{\mathbf{y}} + ay_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_6}$ | = | $\left(z_1 + \frac{1}{2}\right)\,\mathbf{a}_1 - \left(x_1 - \frac{1}{2}\right)\,\mathbf{a}_2 - y_1\,\mathbf{a}_3$ | = | $a\left(z_1 + \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(x_1 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - ay_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_7}$ | = | $-\left(z_1 - \frac{1}{2}\right)\,\mathbf{a}_1 - x_1\,\mathbf{a}_2 + \left(y_1 + \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-a\left(z_1 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - ax_1\,\hat{\mathbf{y}} + a\left(y_1 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_8}$ | = | $-z_1\,\mathbf{a}_1 + \left(x_1 + \frac{1}{2}\right)\,\mathbf{a}_2 - \left(y_1 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-az_1\,\hat{\mathbf{x}} + a\left(x_1 + \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_1 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_9}$ | = | $y_1\,\mathbf{a}_1 + z_1\,\mathbf{a}_2 + x_1\,\mathbf{a}_3$ | = | $ay_1\,\hat{\mathbf{x}} + az_1\,\hat{\mathbf{y}} + ax_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{10}}$ | = | $-y_1\,\mathbf{a}_1 + \left(z_1 + \frac{1}{2}\right)\,\mathbf{a}_2 - \left(x_1 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-ay_1\,\hat{\mathbf{x}} + a\left(z_1 + \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_1 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{11}}$ | = | $\left(y_1 + \frac{1}{2}\right)\,\mathbf{a}_1 - \left(z_1 - \frac{1}{2}\right)\,\mathbf{a}_2 - x_1\,\mathbf{a}_3$ | = | $a\left(y_1 + \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_1 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - ax_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{12}}$ | = | $-\left(y_1 - \frac{1}{2}\right)\,\mathbf{a}_1 - z_1\,\mathbf{a}_2 + \left(x_1 + \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-a\left(y_1 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - az_1\,\hat{\mathbf{y}} + a\left(x_1 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{13}}$ | = | $-x_1\,\mathbf{a}_1 - y_1\,\mathbf{a}_2 - z_1\,\mathbf{a}_3$ | = | $-ax_1\,\hat{\mathbf{x}} - ay_1\,\hat{\mathbf{y}} - az_1\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{14}}$ | = | $\left(x_1 + \frac{1}{2}\right)\,\mathbf{a}_1 + y_1\,\mathbf{a}_2 - \left(z_1 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $a\left(x_1 + \frac{1}{2}\right)\,\hat{\mathbf{x}} + ay_1\,\hat{\mathbf{y}} - a\left(z_1 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |
| $\mathbf{B_{15}}$ | = | $x_1\,\mathbf{a}_1 - \left(y_1 - \frac{1}{2}\right)\,\mathbf{a}_2 + \left(z_1 + \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $ax_1\,\hat{\mathbf{x}} - a\left(y_1 - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_1 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C I |

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\begin{array}{lcccccc}
\mathbf{B_{16}} & = & -\left(x_1-\frac{1}{2}\right)\,\mathbf{a}_1+\left(y_1+\frac{1}{2}\right)\,\mathbf{a}_2+z_1\,\mathbf{a}_3 & = & -a\left(x_1-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(y_1+\frac{1}{2}\right)\,\hat{\mathbf{y}}+az_1\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{17}} & = & -z_1\,\mathbf{a}_1-x_1\,\mathbf{a}_2-y_1\,\mathbf{a}_3 & = & -az_1\,\hat{\mathbf{x}}-ax_1\,\hat{\mathbf{y}}-ay_1\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{18}} & = & -\left(z_1-\frac{1}{2}\right)\,\mathbf{a}_1+\left(x_1+\frac{1}{2}\right)\,\mathbf{a}_2+y_1\,\mathbf{a}_3 & = & -a\left(z_1-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(x_1+\frac{1}{2}\right)\,\hat{\mathbf{y}}+ay_1\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{19}} & = & \left(z_1+\frac{1}{2}\right)\,\mathbf{a}_1+x_1\,\mathbf{a}_2-\left(y_1-\frac{1}{2}\right)\,\mathbf{a}_3 & = & a\left(z_1+\frac{1}{2}\right)\,\hat{\mathbf{x}}+ax_1\,\hat{\mathbf{y}}-a\left(y_1-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{20}} & = & z_1\,\mathbf{a}_1-\left(x_1-\frac{1}{2}\right)\,\mathbf{a}_2+\left(y_1+\frac{1}{2}\right)\,\mathbf{a}_3 & = & az_1\,\hat{\mathbf{x}}-a\left(x_1-\frac{1}{2}\right)\,\hat{\mathbf{y}}+a\left(y_1+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{21}} & = & -y_1\,\mathbf{a}_1-z_1\,\mathbf{a}_2-x_1\,\mathbf{a}_3 & = & -ay_1\,\hat{\mathbf{x}}-az_1\,\hat{\mathbf{y}}-ax_1\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{22}} & = & y_1\,\mathbf{a}_1-\left(z_1-\frac{1}{2}\right)\,\mathbf{a}_2+\left(x_1+\frac{1}{2}\right)\,\mathbf{a}_3 & = & ay_1\,\hat{\mathbf{x}}-a\left(z_1-\frac{1}{2}\right)\,\hat{\mathbf{y}}+a\left(x_1+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{23}} & = & -\left(y_1-\frac{1}{2}\right)\,\mathbf{a}_1+\left(z_1+\frac{1}{2}\right)\,\mathbf{a}_2+x_1\,\mathbf{a}_3 & = & -a\left(y_1-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(z_1+\frac{1}{2}\right)\,\hat{\mathbf{y}}+ax_1\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{24}} & = & \left(y_1+\frac{1}{2}\right)\,\mathbf{a}_1+z_1\,\mathbf{a}_2-\left(x_1-\frac{1}{2}\right)\,\mathbf{a}_3 & = & a\left(y_1+\frac{1}{2}\right)\,\hat{\mathbf{x}}+az_1\,\hat{\mathbf{y}}-a\left(x_1-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ I}\\
\mathbf{B_{25}} & = & x_2\,\mathbf{a}_1+y_2\,\mathbf{a}_2+z_2\,\mathbf{a}_3 & = & ax_2\,\hat{\mathbf{x}}+ay_2\,\hat{\mathbf{y}}+az_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{26}} & = & -\left(x_2-\frac{1}{2}\right)\,\mathbf{a}_1-y_2\,\mathbf{a}_2+\left(z_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & -a\left(x_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}-ay_2\,\hat{\mathbf{y}}+a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{27}} & = & -x_2\,\mathbf{a}_1+\left(y_2+\frac{1}{2}\right)\,\mathbf{a}_2-\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_3 & = & -ax_2\,\hat{\mathbf{x}}+a\left(y_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}-a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{28}} & = & \left(x_2+\frac{1}{2}\right)\,\mathbf{a}_1-\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_2-z_2\,\mathbf{a}_3 & = & a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{x}}-a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}-az_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{29}} & = & z_2\,\mathbf{a}_1+x_2\,\mathbf{a}_2+y_2\,\mathbf{a}_3 & = & az_2\,\hat{\mathbf{x}}+ax_2\,\hat{\mathbf{y}}+ay_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{30}} & = & \left(z_2+\frac{1}{2}\right)\,\mathbf{a}_1-\left(x_2-\frac{1}{2}\right)\,\mathbf{a}_2-y_2\,\mathbf{a}_3 & = & a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{x}}-a\left(x_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}-ay_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{31}} & = & -\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_1-x_2\,\mathbf{a}_2+\left(y_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & -a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}-ax_2\,\hat{\mathbf{y}}+a\left(y_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{32}} & = & -z_2\,\mathbf{a}_1+\left(x_2+\frac{1}{2}\right)\,\mathbf{a}_2-\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_3 & = & -az_2\,\hat{\mathbf{x}}+a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}-a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{33}} & = & y_2\,\mathbf{a}_1+z_2\,\mathbf{a}_2+x_2\,\mathbf{a}_3 & = & ay_2\,\hat{\mathbf{x}}+az_2\,\hat{\mathbf{y}}+ax_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{34}} & = & -y_2\,\mathbf{a}_1+\left(z_2+\frac{1}{2}\right)\,\mathbf{a}_2-\left(x_2-\frac{1}{2}\right)\,\mathbf{a}_3 & = & -ay_2\,\hat{\mathbf{x}}+a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}-a\left(x_2-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{35}} & = & \left(y_2+\frac{1}{2}\right)\,\mathbf{a}_1-\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_2-x_2\,\mathbf{a}_3 & = & a\left(y_2+\frac{1}{2}\right)\,\hat{\mathbf{x}}-a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}-ax_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{36}} & = & -\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_1-z_2\,\mathbf{a}_2+\left(x_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & -a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}-az_2\,\hat{\mathbf{y}}+a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{37}} & = & -x_2\,\mathbf{a}_1-y_2\,\mathbf{a}_2-z_2\,\mathbf{a}_3 & = & -ax_2\,\hat{\mathbf{x}}-ay_2\,\hat{\mathbf{y}}-az_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{38}} & = & \left(x_2+\frac{1}{2}\right)\,\mathbf{a}_1+y_2\,\mathbf{a}_2-\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_3 & = & a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{x}}+ay_2\,\hat{\mathbf{y}}-a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{39}} & = & x_2\,\mathbf{a}_1-\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_2+\left(z_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & ax_2\,\hat{\mathbf{x}}-a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}+a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{40}} & = & -\left(x_2-\frac{1}{2}\right)\,\mathbf{a}_1+\left(y_2+\frac{1}{2}\right)\,\mathbf{a}_2+z_2\,\mathbf{a}_3 & = & -a\left(x_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(y_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}+az_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{41}} & = & -z_2\,\mathbf{a}_1-x_2\,\mathbf{a}_2-y_2\,\mathbf{a}_3 & = & -az_2\,\hat{\mathbf{x}}-ax_2\,\hat{\mathbf{y}}-ay_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{42}} & = & -\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_1+\left(x_2+\frac{1}{2}\right)\,\mathbf{a}_2+y_2\,\mathbf{a}_3 & = & -a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}+ay_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{43}} & = & \left(z_2+\frac{1}{2}\right)\,\mathbf{a}_1+x_2\,\mathbf{a}_2-\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_3 & = & a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{x}}+ax_2\,\hat{\mathbf{y}}-a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{44}} & = & z_2\,\mathbf{a}_1-\left(x_2-\frac{1}{2}\right)\,\mathbf{a}_2+\left(y_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & az_2\,\hat{\mathbf{x}}-a\left(x_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}+a\left(y_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{45}} & = & -y_2\,\mathbf{a}_1-z_2\,\mathbf{a}_2-x_2\,\mathbf{a}_3 & = & -ay_2\,\hat{\mathbf{x}}-az_2\,\hat{\mathbf{y}}-ax_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{46}} & = & y_2\,\mathbf{a}_1-\left(z_2-\frac{1}{2}\right)\,\mathbf{a}_2+\left(x_2+\frac{1}{2}\right)\,\mathbf{a}_3 & = & ay_2\,\hat{\mathbf{x}}-a\left(z_2-\frac{1}{2}\right)\,\hat{\mathbf{y}}+a\left(x_2+\frac{1}{2}\right)\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}\\
\mathbf{B_{47}} & = & -\left(y_2-\frac{1}{2}\right)\,\mathbf{a}_1+\left(z_2+\frac{1}{2}\right)\,\mathbf{a}_2+x_2\,\mathbf{a}_3 & = & -a\left(y_2-\frac{1}{2}\right)\,\hat{\mathbf{x}}+a\left(z_2+\frac{1}{2}\right)\,\hat{\mathbf{y}}+ax_2\,\hat{\mathbf{z}} & (24\mathrm{d}) & \mathrm{C\ II}
\end{array}
$$

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\begin{array}{lcccccc}
\mathbf{B_{48}} & = & \left(y_2+\frac{1}{2}\right)\mathbf{a}_1+z_2\,\mathbf{a}_2-\left(x_2-\frac{1}{2}\right)\mathbf{a}_3 & = & a\left(y_2+\frac{1}{2}\right)\hat{\mathbf{x}}+az_2\,\hat{\mathbf{y}}-a\left(x_2-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C II} \\
\mathbf{B_{49}} & = & x_3\,\mathbf{a}_1+y_3\,\mathbf{a}_2+z_3\,\mathbf{a}_3 & = & ax_3\,\hat{\mathbf{x}}+ay_3\,\hat{\mathbf{y}}+az_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{50}} & = & -\left(x_3-\frac{1}{2}\right)\mathbf{a}_1-y_3\,\mathbf{a}_2+\left(z_3+\frac{1}{2}\right)\mathbf{a}_3 & = & -a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{x}}-ay_3\,\hat{\mathbf{y}}+a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{51}} & = & -x_3\,\mathbf{a}_1+\left(y_3+\frac{1}{2}\right)\mathbf{a}_2-\left(z_3-\frac{1}{2}\right)\mathbf{a}_3 & = & -ax_3\,\hat{\mathbf{x}}+a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{52}} & = & \left(x_3+\frac{1}{2}\right)\mathbf{a}_1-\left(y_3-\frac{1}{2}\right)\mathbf{a}_2-z_3\,\mathbf{a}_3 & = & a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{y}}-az_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{53}} & = & z_3\,\mathbf{a}_1+x_3\,\mathbf{a}_2+y_3\,\mathbf{a}_3 & = & az_3\,\hat{\mathbf{x}}+ax_3\,\hat{\mathbf{y}}+ay_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{54}} & = & \left(z_3+\frac{1}{2}\right)\mathbf{a}_1-\left(x_3-\frac{1}{2}\right)\mathbf{a}_2-y_3\,\mathbf{a}_3 & = & a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{y}}-ay_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{55}} & = & -\left(z_3-\frac{1}{2}\right)\mathbf{a}_1-x_3\,\mathbf{a}_2+\left(y_3+\frac{1}{2}\right)\mathbf{a}_3 & = & -a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{x}}-ax_3\,\hat{\mathbf{y}}+a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{56}} & = & -z_3\,\mathbf{a}_1+\left(x_3+\frac{1}{2}\right)\mathbf{a}_2-\left(y_3-\frac{1}{2}\right)\mathbf{a}_3 & = & -az_3\,\hat{\mathbf{x}}+a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{57}} & = & y_3\,\mathbf{a}_1+z_3\,\mathbf{a}_2+x_3\,\mathbf{a}_3 & = & ay_3\,\hat{\mathbf{x}}+az_3\,\hat{\mathbf{y}}+ax_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{58}} & = & -y_3\,\mathbf{a}_1+\left(z_3+\frac{1}{2}\right)\mathbf{a}_2-\left(x_3-\frac{1}{2}\right)\mathbf{a}_3 & = & -ay_3\,\hat{\mathbf{x}}+a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{59}} & = & \left(y_3+\frac{1}{2}\right)\mathbf{a}_1-\left(z_3-\frac{1}{2}\right)\mathbf{a}_2-x_3\,\mathbf{a}_3 & = & a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{y}}-ax_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{60}} & = & -\left(y_3-\frac{1}{2}\right)\mathbf{a}_1-z_3\,\mathbf{a}_2+\left(x_3+\frac{1}{2}\right)\mathbf{a}_3 & = & -a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{x}}-az_3\,\hat{\mathbf{y}}+a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{61}} & = & -x_3\,\mathbf{a}_1-y_3\,\mathbf{a}_2-z_3\,\mathbf{a}_3 & = & -ax_3\,\hat{\mathbf{x}}-ay_3\,\hat{\mathbf{y}}-az_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{62}} & = & \left(x_3+\frac{1}{2}\right)\mathbf{a}_1+y_3\,\mathbf{a}_2-\left(z_3-\frac{1}{2}\right)\mathbf{a}_3 & = & a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{x}}+ay_3\,\hat{\mathbf{y}}-a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{63}} & = & x_3\,\mathbf{a}_1-\left(y_3-\frac{1}{2}\right)\mathbf{a}_2+\left(z_3+\frac{1}{2}\right)\mathbf{a}_3 & = & ax_3\,\hat{\mathbf{x}}-a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{64}} & = & -\left(x_3-\frac{1}{2}\right)\mathbf{a}_1+\left(y_3+\frac{1}{2}\right)\mathbf{a}_2+z_3\,\mathbf{a}_3 & = & -a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{y}}+az_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{65}} & = & -z_3\,\mathbf{a}_1-x_3\,\mathbf{a}_2-y_3\,\mathbf{a}_3 & = & -az_3\,\hat{\mathbf{x}}-ax_3\,\hat{\mathbf{y}}-ay_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{66}} & = & -\left(z_3-\frac{1}{2}\right)\mathbf{a}_1+\left(x_3+\frac{1}{2}\right)\mathbf{a}_2+y_3\,\mathbf{a}_3 & = & -a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{y}}+ay_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{67}} & = & \left(z_3+\frac{1}{2}\right)\mathbf{a}_1+x_3\,\mathbf{a}_2-\left(y_3-\frac{1}{2}\right)\mathbf{a}_3 & = & a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{x}}+ax_3\,\hat{\mathbf{y}}-a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{68}} & = & z_3\,\mathbf{a}_1-\left(x_3-\frac{1}{2}\right)\mathbf{a}_2+\left(y_3+\frac{1}{2}\right)\mathbf{a}_3 & = & az_3\,\hat{\mathbf{x}}-a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{69}} & = & -y_3\,\mathbf{a}_1-z_3\,\mathbf{a}_2-x_3\,\mathbf{a}_3 & = & -ay_3\,\hat{\mathbf{x}}-az_3\,\hat{\mathbf{y}}-ax_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{70}} & = & y_3\,\mathbf{a}_1-\left(z_3-\frac{1}{2}\right)\mathbf{a}_2+\left(x_3+\frac{1}{2}\right)\mathbf{a}_3 & = & ay_3\,\hat{\mathbf{x}}-a\left(z_3-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_3+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{71}} & = & -\left(y_3-\frac{1}{2}\right)\mathbf{a}_1+\left(z_3+\frac{1}{2}\right)\mathbf{a}_2+x_3\,\mathbf{a}_3 & = & -a\left(y_3-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_3+\frac{1}{2}\right)\hat{\mathbf{y}}+ax_3\,\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{72}} & = & \left(y_3+\frac{1}{2}\right)\mathbf{a}_1+z_3\,\mathbf{a}_2-\left(x_3-\frac{1}{2}\right)\mathbf{a}_3 & = & a\left(y_3+\frac{1}{2}\right)\hat{\mathbf{x}}+az_3\,\hat{\mathbf{y}}-a\left(x_3-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C III} \\
\mathbf{B_{73}} & = & x_4\,\mathbf{a}_1+y_4\,\mathbf{a}_2+z_4\,\mathbf{a}_3 & = & ax_4\,\hat{\mathbf{x}}+ay_4\,\hat{\mathbf{y}}+az_4\,\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{74}} & = & -\left(x_4-\frac{1}{2}\right)\mathbf{a}_1-y_4\,\mathbf{a}_2+\left(z_4+\frac{1}{2}\right)\mathbf{a}_3 & = & -a\left(x_4-\frac{1}{2}\right)\hat{\mathbf{x}}-ay_4\,\hat{\mathbf{y}}+a\left(z_4+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{75}} & = & -x_4\,\mathbf{a}_1+\left(y_4+\frac{1}{2}\right)\mathbf{a}_2-\left(z_4-\frac{1}{2}\right)\mathbf{a}_3 & = & -ax_4\,\hat{\mathbf{x}}+a\left(y_4+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_4-\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{76}} & = & \left(x_4+\frac{1}{2}\right)\mathbf{a}_1-\left(y_4-\frac{1}{2}\right)\mathbf{a}_2-z_4\,\mathbf{a}_3 & = & a\left(x_4+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_4-\frac{1}{2}\right)\hat{\mathbf{y}}-az_4\,\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{77}} & = & z_4\,\mathbf{a}_1+x_4\,\mathbf{a}_2+y_4\,\mathbf{a}_3 & = & az_4\,\hat{\mathbf{x}}+ax_4\,\hat{\mathbf{y}}+ay_4\,\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{78}} & = & \left(z_4+\frac{1}{2}\right)\mathbf{a}_1-\left(x_4-\frac{1}{2}\right)\mathbf{a}_2-y_4\,\mathbf{a}_3 & = & a\left(z_4+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_4-\frac{1}{2}\right)\hat{\mathbf{y}}-ay_4\,\hat{\mathbf{z}} & \text{(24d)} & \text{C IV} \\
\mathbf{B_{79}} & = & -\left(z_4-\frac{1}{2}\right)\mathbf{a}_1-x_4\,\mathbf{a}_2+\left(y_4+\frac{1}{2}\right)\mathbf{a}_3 & = & -a\left(z_4-\frac{1}{2}\right)\hat{\mathbf{x}}-ax_4\,\hat{\mathbf{y}}+a\left(y_4+\frac{1}{2}\right)\hat{\mathbf{z}} & \text{(24d)} & \text{C IV}
\end{array}
$$

$$\mathbf{B_{80}} = -z_4\,\mathbf{a}_1 + \left(x_4+\tfrac{1}{2}\right)\,\mathbf{a}_2 - \left(y_4-\tfrac{1}{2}\right)\,\mathbf{a}_3 = -az_4\,\hat{\mathbf{x}} + a\left(x_4+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_4-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{81}} = y_4\,\mathbf{a}_1 + z_4\,\mathbf{a}_2 + x_4\,\mathbf{a}_3 = ay_4\,\hat{\mathbf{x}} + az_4\,\hat{\mathbf{y}} + ax_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{82}} = -y_4\,\mathbf{a}_1 + \left(z_4+\tfrac{1}{2}\right)\,\mathbf{a}_2 - \left(x_4-\tfrac{1}{2}\right)\,\mathbf{a}_3 = -ay_4\,\hat{\mathbf{x}} + a\left(z_4+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_4-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{83}} = \left(y_4+\tfrac{1}{2}\right)\,\mathbf{a}_1 - \left(z_4-\tfrac{1}{2}\right)\,\mathbf{a}_2 - x_4\,\mathbf{a}_3 = a\left(y_4+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_4-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - ax_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{84}} = -\left(y_4-\tfrac{1}{2}\right)\,\mathbf{a}_1 - z_4\,\mathbf{a}_2 + \left(x_4+\tfrac{1}{2}\right)\,\mathbf{a}_3 = -a\left(y_4-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - az_4\,\hat{\mathbf{y}} + a\left(x_4+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{85}} = -x_4\,\mathbf{a}_1 - y_4\,\mathbf{a}_2 - z_4\,\mathbf{a}_3 = -ax_4\,\hat{\mathbf{x}} - ay_4\,\hat{\mathbf{y}} - az_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{86}} = \left(x_4+\tfrac{1}{2}\right)\,\mathbf{a}_1 + y_4\,\mathbf{a}_2 - \left(z_4-\tfrac{1}{2}\right)\,\mathbf{a}_3 = a\left(x_4+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + ay_4\,\hat{\mathbf{y}} - a\left(z_4-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{87}} = x_4\,\mathbf{a}_1 - \left(y_4-\tfrac{1}{2}\right)\,\mathbf{a}_2 + \left(z_4+\tfrac{1}{2}\right)\,\mathbf{a}_3 = ax_4\,\hat{\mathbf{x}} - a\left(y_4-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_4+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{88}} = -\left(x_4-\tfrac{1}{2}\right)\,\mathbf{a}_1 + \left(y_4+\tfrac{1}{2}\right)\,\mathbf{a}_2 + z_4\,\mathbf{a}_3 = -a\left(x_4-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(y_4+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + az_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{89}} = -z_4\,\mathbf{a}_1 - x_4\,\mathbf{a}_2 - y_4\,\mathbf{a}_3 = -az_4\,\hat{\mathbf{x}} - ax_4\,\hat{\mathbf{y}} - ay_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{90}} = -\left(z_4-\tfrac{1}{2}\right)\,\mathbf{a}_1 + \left(x_4+\tfrac{1}{2}\right)\,\mathbf{a}_2 + y_4\,\mathbf{a}_3 = -a\left(z_4-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(x_4+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + ay_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{91}} = \left(z_4+\tfrac{1}{2}\right)\,\mathbf{a}_1 + x_4\,\mathbf{a}_2 - \left(y_4-\tfrac{1}{2}\right)\,\mathbf{a}_3 = a\left(z_4+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + ax_4\,\hat{\mathbf{y}} - a\left(y_4-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{92}} = z_4\,\mathbf{a}_1 - \left(x_4-\tfrac{1}{2}\right)\,\mathbf{a}_2 + \left(y_4+\tfrac{1}{2}\right)\,\mathbf{a}_3 = az_4\,\hat{\mathbf{x}} - a\left(x_4-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(y_4+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{93}} = -y_4\,\mathbf{a}_1 - z_4\,\mathbf{a}_2 - x_4\,\mathbf{a}_3 = -ay_4\,\hat{\mathbf{x}} - az_4\,\hat{\mathbf{y}} - ax_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{94}} = y_4\,\mathbf{a}_1 - \left(z_4-\tfrac{1}{2}\right)\,\mathbf{a}_2 + \left(x_4+\tfrac{1}{2}\right)\,\mathbf{a}_3 = ay_4\,\hat{\mathbf{x}} - a\left(z_4-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(x_4+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{95}} = -\left(y_4-\tfrac{1}{2}\right)\,\mathbf{a}_1 + \left(z_4+\tfrac{1}{2}\right)\,\mathbf{a}_2 + x_4\,\mathbf{a}_3 = -a\left(y_4-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(z_4+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + ax_4\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{96}} = \left(y_4+\tfrac{1}{2}\right)\,\mathbf{a}_1 + z_4\,\mathbf{a}_2 - \left(x_4-\tfrac{1}{2}\right)\,\mathbf{a}_3 = a\left(y_4+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + az_4\,\hat{\mathbf{y}} - a\left(x_4-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IV}$$

$$\mathbf{B_{97}} = x_5\,\mathbf{a}_1 + y_5\,\mathbf{a}_2 + z_5\,\mathbf{a}_3 = ax_5\,\hat{\mathbf{x}} + ay_5\,\hat{\mathbf{y}} + az_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{98}} = -\left(x_5-\tfrac{1}{2}\right)\,\mathbf{a}_1 - y_5\,\mathbf{a}_2 + \left(z_5+\tfrac{1}{2}\right)\,\mathbf{a}_3 = -a\left(x_5-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - ay_5\,\hat{\mathbf{y}} + a\left(z_5+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{99}} = -x_5\,\mathbf{a}_1 + \left(y_5+\tfrac{1}{2}\right)\,\mathbf{a}_2 - \left(z_5-\tfrac{1}{2}\right)\,\mathbf{a}_3 = -ax_5\,\hat{\mathbf{x}} + a\left(y_5+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(z_5-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{100}} = \left(x_5+\tfrac{1}{2}\right)\,\mathbf{a}_1 - \left(y_5-\tfrac{1}{2}\right)\,\mathbf{a}_2 - z_5\,\mathbf{a}_3 = a\left(x_5+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(y_5-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - az_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{101}} = z_5\,\mathbf{a}_1 + x_5\,\mathbf{a}_2 + y_5\,\mathbf{a}_3 = az_5\,\hat{\mathbf{x}} + ax_5\,\hat{\mathbf{y}} + ay_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{102}} = \left(z_5+\tfrac{1}{2}\right)\,\mathbf{a}_1 - \left(x_5-\tfrac{1}{2}\right)\,\mathbf{a}_2 - y_5\,\mathbf{a}_3 = a\left(z_5+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(x_5-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - ay_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{103}} = -\left(z_5-\tfrac{1}{2}\right)\,\mathbf{a}_1 - x_5\,\mathbf{a}_2 + \left(y_5+\tfrac{1}{2}\right)\,\mathbf{a}_3 = -a\left(z_5-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - ax_5\,\hat{\mathbf{y}} + a\left(y_5+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{104}} = -z_5\,\mathbf{a}_1 + \left(x_5+\tfrac{1}{2}\right)\,\mathbf{a}_2 - \left(y_5-\tfrac{1}{2}\right)\,\mathbf{a}_3 = -az_5\,\hat{\mathbf{x}} + a\left(x_5+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_5-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{105}} = y_5\,\mathbf{a}_1 + z_5\,\mathbf{a}_2 + x_5\,\mathbf{a}_3 = ay_5\,\hat{\mathbf{x}} + az_5\,\hat{\mathbf{y}} + ax_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{106}} = -y_5\,\mathbf{a}_1 + \left(z_5+\tfrac{1}{2}\right)\,\mathbf{a}_2 - \left(x_5-\tfrac{1}{2}\right)\,\mathbf{a}_3 = -ay_5\,\hat{\mathbf{x}} + a\left(z_5+\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_5-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{107}} = \left(y_5+\tfrac{1}{2}\right)\,\mathbf{a}_1 - \left(z_5-\tfrac{1}{2}\right)\,\mathbf{a}_2 - x_5\,\mathbf{a}_3 = a\left(y_5+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_5-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} - ax_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{108}} = -\left(y_5-\tfrac{1}{2}\right)\,\mathbf{a}_1 - z_5\,\mathbf{a}_2 + \left(x_5+\tfrac{1}{2}\right)\,\mathbf{a}_3 = -a\left(y_5-\tfrac{1}{2}\right)\,\hat{\mathbf{x}} - az_5\,\hat{\mathbf{y}} + a\left(x_5+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{109}} = -x_5\,\mathbf{a}_1 - y_5\,\mathbf{a}_2 - z_5\,\mathbf{a}_3 = -ax_5\,\hat{\mathbf{x}} - ay_5\,\hat{\mathbf{y}} - az_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{110}} = \left(x_5+\tfrac{1}{2}\right)\,\mathbf{a}_1 + y_5\,\mathbf{a}_2 - \left(z_5-\tfrac{1}{2}\right)\,\mathbf{a}_3 = a\left(x_5+\tfrac{1}{2}\right)\,\hat{\mathbf{x}} + ay_5\,\hat{\mathbf{y}} - a\left(z_5-\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{111}} = x_5\,\mathbf{a}_1 - \left(y_5-\tfrac{1}{2}\right)\,\mathbf{a}_2 + \left(z_5+\tfrac{1}{2}\right)\,\mathbf{a}_3 = ax_5\,\hat{\mathbf{x}} - a\left(y_5-\tfrac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_5+\tfrac{1}{2}\right)\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{112}} = -\left(x_5-\tfrac{1}{2}\right)\mathbf{a}_1+\left(y_5+\tfrac{1}{2}\right)\mathbf{a}_2+z_5\,\mathbf{a}_3 = -a\left(x_5-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_5+\tfrac{1}{2}\right)\hat{\mathbf{y}}+az_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{113}} = -z_5\,\mathbf{a}_1-x_5\,\mathbf{a}_2-y_5\,\mathbf{a}_3 = -az_5\,\hat{\mathbf{x}}-ax_5\,\hat{\mathbf{y}}-ay_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{114}} = -\left(z_5-\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_5+\tfrac{1}{2}\right)\mathbf{a}_2+y_5\,\mathbf{a}_3 = -a\left(z_5-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_5+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ay_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{115}} = \left(z_5+\tfrac{1}{2}\right)\mathbf{a}_1+x_5\,\mathbf{a}_2-\left(y_5-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_5+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ax_5\,\hat{\mathbf{y}}-a\left(y_5-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{116}} = z_5\,\mathbf{a}_1-\left(x_5-\tfrac{1}{2}\right)\mathbf{a}_2+\left(y_5+\tfrac{1}{2}\right)\mathbf{a}_3 = az_5\,\hat{\mathbf{x}}-a\left(x_5-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_5+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{117}} = -y_5\,\mathbf{a}_1-z_5\,\mathbf{a}_2-x_5\,\mathbf{a}_3 = -ay_5\,\hat{\mathbf{x}}-az_5\,\hat{\mathbf{y}}-ax_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{118}} = y_5\,\mathbf{a}_1-\left(z_5-\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_5+\tfrac{1}{2}\right)\mathbf{a}_3 = ay_5\,\hat{\mathbf{x}}-a\left(z_5-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_5+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{119}} = -\left(y_5-\tfrac{1}{2}\right)\mathbf{a}_1+\left(z_5+\tfrac{1}{2}\right)\mathbf{a}_2+x_5\,\mathbf{a}_3 = -a\left(y_5-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_5+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ax_5\,\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{120}} = \left(y_5+\tfrac{1}{2}\right)\mathbf{a}_1+z_5\,\mathbf{a}_2-\left(x_5-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(y_5+\tfrac{1}{2}\right)\hat{\mathbf{x}}+az_5\,\hat{\mathbf{y}}-a\left(x_5-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C V}$$

$$\mathbf{B_{121}} = x_6\,\mathbf{a}_1+y_6\,\mathbf{a}_2+z_6\,\mathbf{a}_3 = ax_6\,\hat{\mathbf{x}}+ay_6\,\hat{\mathbf{y}}+az_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{122}} = -\left(x_6-\tfrac{1}{2}\right)\mathbf{a}_1-y_6\,\mathbf{a}_2+\left(z_6+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(x_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}-ay_6\,\hat{\mathbf{y}}+a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{123}} = -x_6\,\mathbf{a}_1+\left(y_6+\tfrac{1}{2}\right)\mathbf{a}_2-\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_3 = -ax_6\,\hat{\mathbf{x}}+a\left(y_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{124}} = \left(x_6+\tfrac{1}{2}\right)\mathbf{a}_1-\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_2-z_6\,\mathbf{a}_3 = a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}-az_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{125}} = z_6\,\mathbf{a}_1+x_6\,\mathbf{a}_2+y_6\,\mathbf{a}_3 = az_6\,\hat{\mathbf{x}}+ax_6\,\hat{\mathbf{y}}+ay_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{126}} = \left(z_6+\tfrac{1}{2}\right)\mathbf{a}_1-\left(x_6-\tfrac{1}{2}\right)\mathbf{a}_2-y_6\,\mathbf{a}_3 = a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}-ay_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{127}} = -\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_1-x_6\,\mathbf{a}_2+\left(y_6+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}-ax_6\,\hat{\mathbf{y}}+a\left(y_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{128}} = -z_6\,\mathbf{a}_1+\left(x_6+\tfrac{1}{2}\right)\mathbf{a}_2-\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_3 = -az_6\,\hat{\mathbf{x}}+a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{129}} = y_6\,\mathbf{a}_1+z_6\,\mathbf{a}_2+x_6\,\mathbf{a}_3 = ay_6\,\hat{\mathbf{x}}+az_6\,\hat{\mathbf{y}}+ax_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{130}} = -y_6\,\mathbf{a}_1+\left(z_6+\tfrac{1}{2}\right)\mathbf{a}_2-\left(x_6-\tfrac{1}{2}\right)\mathbf{a}_3 = -ay_6\,\hat{\mathbf{x}}+a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(x_6-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{131}} = \left(y_6+\tfrac{1}{2}\right)\mathbf{a}_1-\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_2-x_6\,\mathbf{a}_3 = a\left(y_6+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}-ax_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{132}} = -\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_1-z_6\,\mathbf{a}_2+\left(x_6+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}-az_6\,\hat{\mathbf{y}}+a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{133}} = -x_6\,\mathbf{a}_1-y_6\,\mathbf{a}_2-z_6\,\mathbf{a}_3 = -ax_6\,\hat{\mathbf{x}}-ay_6\,\hat{\mathbf{y}}-az_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{134}} = \left(x_6+\tfrac{1}{2}\right)\mathbf{a}_1+y_6\,\mathbf{a}_2-\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ay_6\,\hat{\mathbf{y}}-a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{135}} = x_6\,\mathbf{a}_1-\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_2+\left(z_6+\tfrac{1}{2}\right)\mathbf{a}_3 = ax_6\,\hat{\mathbf{x}}-a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{136}} = -\left(x_6-\tfrac{1}{2}\right)\mathbf{a}_1+\left(y_6+\tfrac{1}{2}\right)\mathbf{a}_2+z_6\,\mathbf{a}_3 = -a\left(x_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}+az_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{137}} = -z_6\,\mathbf{a}_1-x_6\,\mathbf{a}_2-y_6\,\mathbf{a}_3 = -az_6\,\hat{\mathbf{x}}-ax_6\,\hat{\mathbf{y}}-ay_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{138}} = -\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_6+\tfrac{1}{2}\right)\mathbf{a}_2+y_6\,\mathbf{a}_3 = -a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ay_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{139}} = \left(z_6+\tfrac{1}{2}\right)\mathbf{a}_1+x_6\,\mathbf{a}_2-\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ax_6\,\hat{\mathbf{y}}-a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{140}} = z_6\,\mathbf{a}_1-\left(x_6-\tfrac{1}{2}\right)\mathbf{a}_2+\left(y_6+\tfrac{1}{2}\right)\mathbf{a}_3 = az_6\,\hat{\mathbf{x}}-a\left(x_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{141}} = -y_6\,\mathbf{a}_1-z_6\,\mathbf{a}_2-x_6\,\mathbf{a}_3 = -ay_6\,\hat{\mathbf{x}}-az_6\,\hat{\mathbf{y}}-ax_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{142}} = y_6\,\mathbf{a}_1-\left(z_6-\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_6+\tfrac{1}{2}\right)\mathbf{a}_3 = ay_6\,\hat{\mathbf{x}}-a\left(z_6-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_6+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

$$\mathbf{B_{143}} = -\left(y_6-\tfrac{1}{2}\right)\mathbf{a}_1+\left(z_6+\tfrac{1}{2}\right)\mathbf{a}_2+x_6\,\mathbf{a}_3 = -a\left(y_6-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_6+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ax_6\,\hat{\mathbf{z}} \quad (24d) \quad \text{C VI}$$

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| $\mathbf{B_{144}} =$ | $\left(y_6+\frac{1}{2}\right)\mathbf{a}_1+z_6\,\mathbf{a}_2-\left(x_6-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $a\left(y_6+\frac{1}{2}\right)\hat{\mathbf{x}}+az_6\,\hat{\mathbf{y}}-a\left(x_6-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VI |
| $\mathbf{B_{145}} =$ | $x_7\,\mathbf{a}_1+y_7\,\mathbf{a}_2+z_7\,\mathbf{a}_3$ | $=$ | $ax_7\,\hat{\mathbf{x}}+ay_7\,\hat{\mathbf{y}}+az_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{146}} =$ | $-\left(x_7-\frac{1}{2}\right)\mathbf{a}_1-y_7\,\mathbf{a}_2+\left(z_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{x}}-ay_7\,\hat{\mathbf{y}}+a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{147}} =$ | $-x_7\,\mathbf{a}_1+\left(y_7+\frac{1}{2}\right)\mathbf{a}_2-\left(z_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-ax_7\,\hat{\mathbf{x}}+a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{148}} =$ | $\left(x_7+\frac{1}{2}\right)\mathbf{a}_1-\left(y_7-\frac{1}{2}\right)\mathbf{a}_2-z_7\,\mathbf{a}_3$ | $=$ | $a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{y}}-az_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{149}} =$ | $z_7\,\mathbf{a}_1+x_7\,\mathbf{a}_2+y_7\,\mathbf{a}_3$ | $=$ | $az_7\,\hat{\mathbf{x}}+ax_7\,\hat{\mathbf{y}}+ay_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{150}} =$ | $\left(z_7+\frac{1}{2}\right)\mathbf{a}_1-\left(x_7-\frac{1}{2}\right)\mathbf{a}_2-y_7\,\mathbf{a}_3$ | $=$ | $a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{y}}-ay_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{151}} =$ | $-\left(z_7-\frac{1}{2}\right)\mathbf{a}_1-x_7\,\mathbf{a}_2+\left(y_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{x}}-ax_7\,\hat{\mathbf{y}}+a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{152}} =$ | $-z_7\,\mathbf{a}_1+\left(x_7+\frac{1}{2}\right)\mathbf{a}_2-\left(y_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-az_7\,\hat{\mathbf{x}}+a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{153}} =$ | $y_7\,\mathbf{a}_1+z_7\,\mathbf{a}_2+x_7\,\mathbf{a}_3$ | $=$ | $ay_7\,\hat{\mathbf{x}}+az_7\,\hat{\mathbf{y}}+ax_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{154}} =$ | $-y_7\,\mathbf{a}_1+\left(z_7+\frac{1}{2}\right)\mathbf{a}_2-\left(x_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-ay_7\,\hat{\mathbf{x}}+a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{155}} =$ | $\left(y_7+\frac{1}{2}\right)\mathbf{a}_1-\left(z_7-\frac{1}{2}\right)\mathbf{a}_2-x_7\,\mathbf{a}_3$ | $=$ | $a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{y}}-ax_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{156}} =$ | $-\left(y_7-\frac{1}{2}\right)\mathbf{a}_1-z_7\,\mathbf{a}_2+\left(x_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{x}}-az_7\,\hat{\mathbf{y}}+a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{157}} =$ | $-x_7\,\mathbf{a}_1-y_7\,\mathbf{a}_2-z_7\,\mathbf{a}_3$ | $=$ | $-ax_7\,\hat{\mathbf{x}}-ay_7\,\hat{\mathbf{y}}-az_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{158}} =$ | $\left(x_7+\frac{1}{2}\right)\mathbf{a}_1+y_7\,\mathbf{a}_2-\left(z_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{x}}+ay_7\,\hat{\mathbf{y}}-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{159}} =$ | $x_7\,\mathbf{a}_1-\left(y_7-\frac{1}{2}\right)\mathbf{a}_2+\left(z_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $ax_7\,\hat{\mathbf{x}}-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{160}} =$ | $-\left(x_7-\frac{1}{2}\right)\mathbf{a}_1+\left(y_7+\frac{1}{2}\right)\mathbf{a}_2+z_7\,\mathbf{a}_3$ | $=$ | $-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{y}}+az_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{161}} =$ | $-z_7\,\mathbf{a}_1-x_7\,\mathbf{a}_2-y_7\,\mathbf{a}_3$ | $=$ | $-az_7\,\hat{\mathbf{x}}-ax_7\,\hat{\mathbf{y}}-ay_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{162}} =$ | $-\left(z_7-\frac{1}{2}\right)\mathbf{a}_1+\left(x_7+\frac{1}{2}\right)\mathbf{a}_2+y_7\,\mathbf{a}_3$ | $=$ | $-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{y}}+ay_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{163}} =$ | $\left(z_7+\frac{1}{2}\right)\mathbf{a}_1+x_7\,\mathbf{a}_2-\left(y_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{x}}+ax_7\,\hat{\mathbf{y}}-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{164}} =$ | $z_7\,\mathbf{a}_1-\left(x_7-\frac{1}{2}\right)\mathbf{a}_2+\left(y_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $az_7\,\hat{\mathbf{x}}-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{165}} =$ | $-y_7\,\mathbf{a}_1-z_7\,\mathbf{a}_2-x_7\,\mathbf{a}_3$ | $=$ | $-ay_7\,\hat{\mathbf{x}}-az_7\,\hat{\mathbf{y}}-ax_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{166}} =$ | $y_7\,\mathbf{a}_1-\left(z_7-\frac{1}{2}\right)\mathbf{a}_2+\left(x_7+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $ay_7\,\hat{\mathbf{x}}-a\left(z_7-\frac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_7+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{167}} =$ | $-\left(y_7-\frac{1}{2}\right)\mathbf{a}_1+\left(z_7+\frac{1}{2}\right)\mathbf{a}_2+x_7\,\mathbf{a}_3$ | $=$ | $-a\left(y_7-\frac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_7+\frac{1}{2}\right)\hat{\mathbf{y}}+ax_7\,\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{168}} =$ | $\left(y_7+\frac{1}{2}\right)\mathbf{a}_1+z_7\,\mathbf{a}_2-\left(x_7-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $a\left(y_7+\frac{1}{2}\right)\hat{\mathbf{x}}+az_7\,\hat{\mathbf{y}}-a\left(x_7-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VII |
| $\mathbf{B_{169}} =$ | $x_8\,\mathbf{a}_1+y_8\,\mathbf{a}_2+z_8\,\mathbf{a}_3$ | $=$ | $ax_8\,\hat{\mathbf{x}}+ay_8\,\hat{\mathbf{y}}+az_8\,\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{170}} =$ | $-\left(x_8-\frac{1}{2}\right)\mathbf{a}_1-y_8\,\mathbf{a}_2+\left(z_8+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-a\left(x_8-\frac{1}{2}\right)\hat{\mathbf{x}}-ay_8\,\hat{\mathbf{y}}+a\left(z_8+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{171}} =$ | $-x_8\,\mathbf{a}_1+\left(y_8+\frac{1}{2}\right)\mathbf{a}_2-\left(z_8-\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-ax_8\,\hat{\mathbf{x}}+a\left(y_8+\frac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_8-\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{172}} =$ | $\left(x_8+\frac{1}{2}\right)\mathbf{a}_1-\left(y_8-\frac{1}{2}\right)\mathbf{a}_2-z_8\,\mathbf{a}_3$ | $=$ | $a\left(x_8+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_8-\frac{1}{2}\right)\hat{\mathbf{y}}-az_8\,\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{173}} =$ | $z_8\,\mathbf{a}_1+x_8\,\mathbf{a}_2+y_8\,\mathbf{a}_3$ | $=$ | $az_8\,\hat{\mathbf{x}}+ax_8\,\hat{\mathbf{y}}+ay_8\,\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{174}} =$ | $\left(z_8+\frac{1}{2}\right)\mathbf{a}_1-\left(x_8-\frac{1}{2}\right)\mathbf{a}_2-y_8\,\mathbf{a}_3$ | $=$ | $a\left(z_8+\frac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_8-\frac{1}{2}\right)\hat{\mathbf{y}}-ay_8\,\hat{\mathbf{z}}$ | (24d) | C VIII |
| $\mathbf{B_{175}} =$ | $-\left(z_8-\frac{1}{2}\right)\mathbf{a}_1-x_8\,\mathbf{a}_2+\left(y_8+\frac{1}{2}\right)\mathbf{a}_3$ | $=$ | $-a\left(z_8-\frac{1}{2}\right)\hat{\mathbf{x}}-ax_8\,\hat{\mathbf{y}}+a\left(y_8+\frac{1}{2}\right)\hat{\mathbf{z}}$ | (24d) | C VIII |

$\mathbf{B_{176}} = -z_8\,\mathbf{a}_1 + \left(x_8+\frac{1}{2}\right)\,\mathbf{a}_2 - \left(y_8-\frac{1}{2}\right)\,\mathbf{a}_3 = -az_8\,\hat{\mathbf{x}} + a\left(x_8+\frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_8-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{177}} = y_8\,\mathbf{a}_1 + z_8\,\mathbf{a}_2 + x_8\,\mathbf{a}_3 = ay_8\,\hat{\mathbf{x}} + az_8\,\hat{\mathbf{y}} + ax_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{178}} = -y_8\,\mathbf{a}_1 + \left(z_8+\frac{1}{2}\right)\,\mathbf{a}_2 - \left(x_8-\frac{1}{2}\right)\,\mathbf{a}_3 = -ay_8\,\hat{\mathbf{x}} + a\left(z_8+\frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_8-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{179}} = \left(y_8+\frac{1}{2}\right)\,\mathbf{a}_1 - \left(z_8-\frac{1}{2}\right)\,\mathbf{a}_2 - x_8\,\mathbf{a}_3 = a\left(y_8+\frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_8-\frac{1}{2}\right)\,\hat{\mathbf{y}} - ax_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{180}} = -\left(y_8-\frac{1}{2}\right)\,\mathbf{a}_1 - z_8\,\mathbf{a}_2 + \left(x_8+\frac{1}{2}\right)\,\mathbf{a}_3 = -a\left(y_8-\frac{1}{2}\right)\,\hat{\mathbf{x}} - az_8\,\hat{\mathbf{y}} + a\left(x_8+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{181}} = -x_8\,\mathbf{a}_1 - y_8\,\mathbf{a}_2 - z_8\,\mathbf{a}_3 = -ax_8\,\hat{\mathbf{x}} - ay_8\,\hat{\mathbf{y}} - az_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{182}} = \left(x_8+\frac{1}{2}\right)\,\mathbf{a}_1 + y_8\,\mathbf{a}_2 - \left(z_8-\frac{1}{2}\right)\,\mathbf{a}_3 = a\left(x_8+\frac{1}{2}\right)\,\hat{\mathbf{x}} + ay_8\,\hat{\mathbf{y}} - a\left(z_8-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{183}} = x_8\,\mathbf{a}_1 - \left(y_8-\frac{1}{2}\right)\,\mathbf{a}_2 + \left(z_8+\frac{1}{2}\right)\,\mathbf{a}_3 = ax_8\,\hat{\mathbf{x}} - a\left(y_8-\frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_8+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{184}} = -\left(x_8-\frac{1}{2}\right)\,\mathbf{a}_1 + \left(y_8+\frac{1}{2}\right)\,\mathbf{a}_2 + z_8\,\mathbf{a}_3 = -a\left(x_8-\frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(y_8+\frac{1}{2}\right)\,\hat{\mathbf{y}} + az_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{185}} = -z_8\,\mathbf{a}_1 - x_8\,\mathbf{a}_2 - y_8\,\mathbf{a}_3 = -az_8\,\hat{\mathbf{x}} - ax_8\,\hat{\mathbf{y}} - ay_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{186}} = -\left(z_8-\frac{1}{2}\right)\,\mathbf{a}_1 + \left(x_8+\frac{1}{2}\right)\,\mathbf{a}_2 + y_8\,\mathbf{a}_3 = -a\left(z_8-\frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(x_8+\frac{1}{2}\right)\,\hat{\mathbf{y}} + ay_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{187}} = \left(z_8+\frac{1}{2}\right)\,\mathbf{a}_1 + x_8\,\mathbf{a}_2 - \left(y_8-\frac{1}{2}\right)\,\mathbf{a}_3 = a\left(z_8+\frac{1}{2}\right)\,\hat{\mathbf{x}} + ax_8\,\hat{\mathbf{y}} - a\left(y_8-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{188}} = z_8\,\mathbf{a}_1 - \left(x_8-\frac{1}{2}\right)\,\mathbf{a}_2 + \left(y_8+\frac{1}{2}\right)\,\mathbf{a}_3 = az_8\,\hat{\mathbf{x}} - a\left(x_8-\frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(y_8+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{189}} = -y_8\,\mathbf{a}_1 - z_8\,\mathbf{a}_2 - x_8\,\mathbf{a}_3 = -ay_8\,\hat{\mathbf{x}} - az_8\,\hat{\mathbf{y}} - ax_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{190}} = y_8\,\mathbf{a}_1 - \left(z_8-\frac{1}{2}\right)\,\mathbf{a}_2 + \left(x_8+\frac{1}{2}\right)\,\mathbf{a}_3 = ay_8\,\hat{\mathbf{x}} - a\left(z_8-\frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(x_8+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{191}} = -\left(y_8-\frac{1}{2}\right)\,\mathbf{a}_1 + \left(z_8+\frac{1}{2}\right)\,\mathbf{a}_2 + x_8\,\mathbf{a}_3 = -a\left(y_8-\frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(z_8+\frac{1}{2}\right)\,\hat{\mathbf{y}} + ax_8\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{192}} = \left(y_8+\frac{1}{2}\right)\,\mathbf{a}_1 + z_8\,\mathbf{a}_2 - \left(x_8-\frac{1}{2}\right)\,\mathbf{a}_3 = a\left(y_8+\frac{1}{2}\right)\,\hat{\mathbf{x}} + az_8\,\hat{\mathbf{y}} - a\left(x_8-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C VIII

$\mathbf{B_{193}} = x_9\,\mathbf{a}_1 + y_9\,\mathbf{a}_2 + z_9\,\mathbf{a}_3 = ax_9\,\hat{\mathbf{x}} + ay_9\,\hat{\mathbf{y}} + az_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{194}} = -\left(x_9-\frac{1}{2}\right)\,\mathbf{a}_1 - y_9\,\mathbf{a}_2 + \left(z_9+\frac{1}{2}\right)\,\mathbf{a}_3 = -a\left(x_9-\frac{1}{2}\right)\,\hat{\mathbf{x}} - ay_9\,\hat{\mathbf{y}} + a\left(z_9+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{195}} = -x_9\,\mathbf{a}_1 + \left(y_9+\frac{1}{2}\right)\,\mathbf{a}_2 - \left(z_9-\frac{1}{2}\right)\,\mathbf{a}_3 = -ax_9\,\hat{\mathbf{x}} + a\left(y_9+\frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(z_9-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{196}} = \left(x_9+\frac{1}{2}\right)\,\mathbf{a}_1 - \left(y_9-\frac{1}{2}\right)\,\mathbf{a}_2 - z_9\,\mathbf{a}_3 = a\left(x_9+\frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(y_9-\frac{1}{2}\right)\,\hat{\mathbf{y}} - az_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{197}} = z_9\,\mathbf{a}_1 + x_9\,\mathbf{a}_2 + y_9\,\mathbf{a}_3 = az_9\,\hat{\mathbf{x}} + ax_9\,\hat{\mathbf{y}} + ay_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{198}} = \left(z_9+\frac{1}{2}\right)\,\mathbf{a}_1 - \left(x_9-\frac{1}{2}\right)\,\mathbf{a}_2 - y_9\,\mathbf{a}_3 = a\left(z_9+\frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(x_9-\frac{1}{2}\right)\,\hat{\mathbf{y}} - ay_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{199}} = -\left(z_9-\frac{1}{2}\right)\,\mathbf{a}_1 - x_9\,\mathbf{a}_2 + \left(y_9+\frac{1}{2}\right)\,\mathbf{a}_3 = -a\left(z_9-\frac{1}{2}\right)\,\hat{\mathbf{x}} - ax_9\,\hat{\mathbf{y}} + a\left(y_9+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{200}} = -z_9\,\mathbf{a}_1 + \left(x_9+\frac{1}{2}\right)\,\mathbf{a}_2 - \left(y_9-\frac{1}{2}\right)\,\mathbf{a}_3 = -az_9\,\hat{\mathbf{x}} + a\left(x_9+\frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_9-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{201}} = y_9\,\mathbf{a}_1 + z_9\,\mathbf{a}_2 + x_9\,\mathbf{a}_3 = ay_9\,\hat{\mathbf{x}} + az_9\,\hat{\mathbf{y}} + ax_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{202}} = -y_9\,\mathbf{a}_1 + \left(z_9+\frac{1}{2}\right)\,\mathbf{a}_2 - \left(x_9-\frac{1}{2}\right)\,\mathbf{a}_3 = -ay_9\,\hat{\mathbf{x}} + a\left(z_9+\frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_9-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{203}} = \left(y_9+\frac{1}{2}\right)\,\mathbf{a}_1 - \left(z_9-\frac{1}{2}\right)\,\mathbf{a}_2 - x_9\,\mathbf{a}_3 = a\left(y_9+\frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_9-\frac{1}{2}\right)\,\hat{\mathbf{y}} - ax_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{204}} = -\left(y_9-\frac{1}{2}\right)\,\mathbf{a}_1 - z_9\,\mathbf{a}_2 + \left(x_9+\frac{1}{2}\right)\,\mathbf{a}_3 = -a\left(y_9-\frac{1}{2}\right)\,\hat{\mathbf{x}} - az_9\,\hat{\mathbf{y}} + a\left(x_9+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{205}} = -x_9\,\mathbf{a}_1 - y_9\,\mathbf{a}_2 - z_9\,\mathbf{a}_3 = -ax_9\,\hat{\mathbf{x}} - ay_9\,\hat{\mathbf{y}} - az_9\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{206}} = \left(x_9+\frac{1}{2}\right)\,\mathbf{a}_1 + y_9\,\mathbf{a}_2 - \left(z_9-\frac{1}{2}\right)\,\mathbf{a}_3 = a\left(x_9+\frac{1}{2}\right)\,\hat{\mathbf{x}} + ay_9\,\hat{\mathbf{y}} - a\left(z_9-\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$\mathbf{B_{207}} = x_9\,\mathbf{a}_1 - \left(y_9-\frac{1}{2}\right)\,\mathbf{a}_2 + \left(z_9+\frac{1}{2}\right)\,\mathbf{a}_3 = ax_9\,\hat{\mathbf{x}} - a\left(y_9-\frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_9+\frac{1}{2}\right)\,\hat{\mathbf{z}}$ (24d) C IX

$$\mathbf{B_{208}} = -\left(x_9-\tfrac{1}{2}\right)\mathbf{a}_1+\left(y_9+\tfrac{1}{2}\right)\mathbf{a}_2+z_9\,\mathbf{a}_3 = -a\left(x_9-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_9+\tfrac{1}{2}\right)\hat{\mathbf{y}}+az_9\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{209}} = -z_9\,\mathbf{a}_1-x_9\,\mathbf{a}_2-y_9\,\mathbf{a}_3 = -az_9\,\hat{\mathbf{x}}-ax_9\,\hat{\mathbf{y}}-ay_9\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{210}} = -\left(z_9-\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_9+\tfrac{1}{2}\right)\mathbf{a}_2+y_9\,\mathbf{a}_3 = -a\left(z_9-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_9+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ay_9\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{211}} = \left(z_9+\tfrac{1}{2}\right)\mathbf{a}_1+x_9\,\mathbf{a}_2-\left(y_9-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_9+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ax_9\,\hat{\mathbf{y}}-a\left(y_9-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{212}} = z_9\,\mathbf{a}_1-\left(x_9-\tfrac{1}{2}\right)\mathbf{a}_2+\left(y_9+\tfrac{1}{2}\right)\mathbf{a}_3 = az_9\,\hat{\mathbf{x}}-a\left(x_9-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_9+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{213}} = -y_9\,\mathbf{a}_1-z_9\,\mathbf{a}_2-x_9\,\mathbf{a}_3 = -ay_9\,\hat{\mathbf{x}}-az_9\,\hat{\mathbf{y}}-ax_9\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{214}} = y_9\,\mathbf{a}_1-\left(z_9-\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_9+\tfrac{1}{2}\right)\mathbf{a}_3 = ay_9\,\hat{\mathbf{x}}-a\left(z_9-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_9+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{215}} = -\left(y_9-\tfrac{1}{2}\right)\mathbf{a}_1+\left(z_9+\tfrac{1}{2}\right)\mathbf{a}_2+x_9\,\mathbf{a}_3 = -a\left(y_9-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_9+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ax_9\,\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{216}} = \left(y_9+\tfrac{1}{2}\right)\mathbf{a}_1+z_9\,\mathbf{a}_2-\left(x_9-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(y_9+\tfrac{1}{2}\right)\hat{\mathbf{x}}+az_9\,\hat{\mathbf{y}}-a\left(x_9-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C IX}$$

$$\mathbf{B_{217}} = x_{10}\,\mathbf{a}_1+y_{10}\,\mathbf{a}_2+z_{10}\,\mathbf{a}_3 = ax_{10}\,\hat{\mathbf{x}}+ay_{10}\,\hat{\mathbf{y}}+az_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{218}} = -\left(x_{10}-\tfrac{1}{2}\right)\mathbf{a}_1-y_{10}\,\mathbf{a}_2+\left(z_{10}+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(x_{10}-\tfrac{1}{2}\right)\hat{\mathbf{x}}-ay_{10}\,\hat{\mathbf{y}}+a\left(z_{10}+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{219}} = -x_{10}\,\mathbf{a}_1+\left(y_{10}+\tfrac{1}{2}\right)\mathbf{a}_2-\left(z_{10}-\tfrac{1}{2}\right)\mathbf{a}_3 = -ax_{10}\,\hat{\mathbf{x}}+a\left(y_{10}+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(z_{10}-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{220}} = \left(x_{10}+\tfrac{1}{2}\right)\mathbf{a}_1-\left(y_{10}-\tfrac{1}{2}\right)\mathbf{a}_2-z_{10}\,\mathbf{a}_3 = a\left(x_{10}+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_{10}-\tfrac{1}{2}\right)\hat{\mathbf{y}}-az_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{221}} = z_{10}\,\mathbf{a}_1+x_{10}\,\mathbf{a}_2+y_{10}\,\mathbf{a}_3 = az_{10}\,\hat{\mathbf{x}}+ax_{10}\,\hat{\mathbf{y}}+ay_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{222}} = \left(z_{10}+\tfrac{1}{2}\right)\mathbf{a}_1-\left(x_{10}-\tfrac{1}{2}\right)\mathbf{a}_2-y_{10}\,\mathbf{a}_3 = a\left(z_{10}+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(x_{10}-\tfrac{1}{2}\right)\hat{\mathbf{y}}-ay_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{223}} = -\left(z_{10}-\tfrac{1}{2}\right)\mathbf{a}_1-x_{10}\,\mathbf{a}_2+\left(y_{10}+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(z_{10}-\tfrac{1}{2}\right)\hat{\mathbf{x}}-ax_{10}\,\hat{\mathbf{y}}+a\left(y_{10}+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{224}} = -z_{10}\,\mathbf{a}_1+\left(x_{10}+\tfrac{1}{2}\right)\mathbf{a}_2-\left(y_{10}-\tfrac{1}{2}\right)\mathbf{a}_3 = -az_{10}\,\hat{\mathbf{x}}+a\left(x_{10}+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(y_{10}-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{225}} = y_{10}\,\mathbf{a}_1+z_{10}\,\mathbf{a}_2+x_{10}\,\mathbf{a}_3 = ay_{10}\,\hat{\mathbf{x}}+az_{10}\,\hat{\mathbf{y}}+ax_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{226}} = -y_{10}\,\mathbf{a}_1+\left(z_{10}+\tfrac{1}{2}\right)\mathbf{a}_2-\left(x_{10}-\tfrac{1}{2}\right)\mathbf{a}_3 = -ay_{10}\,\hat{\mathbf{x}}+a\left(z_{10}+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(x_{10}-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{227}} = \left(y_{10}+\tfrac{1}{2}\right)\mathbf{a}_1-\left(z_{10}-\tfrac{1}{2}\right)\mathbf{a}_2-x_{10}\,\mathbf{a}_3 = a\left(y_{10}+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(z_{10}-\tfrac{1}{2}\right)\hat{\mathbf{y}}-ax_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{228}} = -\left(y_{10}-\tfrac{1}{2}\right)\mathbf{a}_1-z_{10}\,\mathbf{a}_2+\left(x_{10}+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(y_{10}-\tfrac{1}{2}\right)\hat{\mathbf{x}}-az_{10}\,\hat{\mathbf{y}}+a\left(x_{10}+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{229}} = -x_{10}\,\mathbf{a}_1-y_{10}\,\mathbf{a}_2-z_{10}\,\mathbf{a}_3 = -ax_{10}\,\hat{\mathbf{x}}-ay_{10}\,\hat{\mathbf{y}}-az_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{230}} = \left(x_{10}+\tfrac{1}{2}\right)\mathbf{a}_1+y_{10}\,\mathbf{a}_2-\left(z_{10}-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(x_{10}+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ay_{10}\,\hat{\mathbf{y}}-a\left(z_{10}-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{231}} = x_{10}\,\mathbf{a}_1-\left(y_{10}-\tfrac{1}{2}\right)\mathbf{a}_2+\left(z_{10}+\tfrac{1}{2}\right)\mathbf{a}_3 = ax_{10}\,\hat{\mathbf{x}}-a\left(y_{10}-\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(z_{10}+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{232}} = -\left(x_{10}-\tfrac{1}{2}\right)\mathbf{a}_1+\left(y_{10}+\tfrac{1}{2}\right)\mathbf{a}_2+z_{10}\,\mathbf{a}_3 = -a\left(x_{10}-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_{10}+\tfrac{1}{2}\right)\hat{\mathbf{y}}+az_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{233}} = -z_{10}\,\mathbf{a}_1-x_{10}\,\mathbf{a}_2-y_{10}\,\mathbf{a}_3 = -az_{10}\,\hat{\mathbf{x}}-ax_{10}\,\hat{\mathbf{y}}-ay_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{234}} = -\left(z_{10}-\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_{10}+\tfrac{1}{2}\right)\mathbf{a}_2+y_{10}\,\mathbf{a}_3 = -a\left(z_{10}-\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(x_{10}+\tfrac{1}{2}\right)\hat{\mathbf{y}}+ay_{10}\,\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

$$\mathbf{B_{235}} = \left(z_{10}+\tfrac{1}{2}\right)\mathbf{a}_1+x_{10}\,\mathbf{a}_2-\left(y_{10}-\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_{10}+\tfrac{1}{2}\right)\hat{\mathbf{x}}+ax_{10}\,\hat{\mathbf{y}}-a\left(y_{10}-\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (24d) \quad \text{C X}$$

| | | | | | |
|---|---|---|---|---|---|
| $\mathbf{B_{236}} =$ | $z_{10}\,\mathbf{a}_1 - \left(x_{10} - \frac{1}{2}\right)\,\mathbf{a}_2 + \left(y_{10} + \frac{1}{2}\right)\,\mathbf{a}_3$ | $=$ | $az_{10}\,\hat{\mathbf{x}} - a\left(x_{10} - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(y_{10} + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C X |
| $\mathbf{B_{237}} =$ | $-y_{10}\,\mathbf{a}_1 - z_{10}\,\mathbf{a}_2 - x_{10}\,\mathbf{a}_3$ | $=$ | $-ay_{10}\,\hat{\mathbf{x}} - az_{10}\,\hat{\mathbf{y}} - ax_{10}\,\hat{\mathbf{z}}$ | (24d) | C X |
| $\mathbf{B_{238}} =$ | $y_{10}\,\mathbf{a}_1 - \left(z_{10} - \frac{1}{2}\right)\,\mathbf{a}_2 + \left(x_{10} + \frac{1}{2}\right)\,\mathbf{a}_3$ | $=$ | $ay_{10}\,\hat{\mathbf{x}} - a\left(z_{10} - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(x_{10} + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C X |
| $\mathbf{B_{239}} =$ | $-\left(y_{10} - \frac{1}{2}\right)\,\mathbf{a}_1 + \left(z_{10} + \frac{1}{2}\right)\,\mathbf{a}_2 + x_{10}\,\mathbf{a}_3$ | $=$ | $-a\left(y_{10} - \frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(z_{10} + \frac{1}{2}\right)\,\hat{\mathbf{y}} + ax_{10}\,\hat{\mathbf{z}}$ | (24d) | C X |
| $\mathbf{B_{240}} =$ | $\left(y_{10} + \frac{1}{2}\right)\,\mathbf{a}_1 + z_{10}\,\mathbf{a}_2 - \left(x_{10} - \frac{1}{2}\right)\,\mathbf{a}_3$ | $=$ | $a\left(y_{10} + \frac{1}{2}\right)\,\hat{\mathbf{x}} + az_{10}\,\hat{\mathbf{y}} - a\left(x_{10} - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (24d) | C X |

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