

Te[OH]₆ Structure: A12B6C_cF608_210_4h_2h_e-001

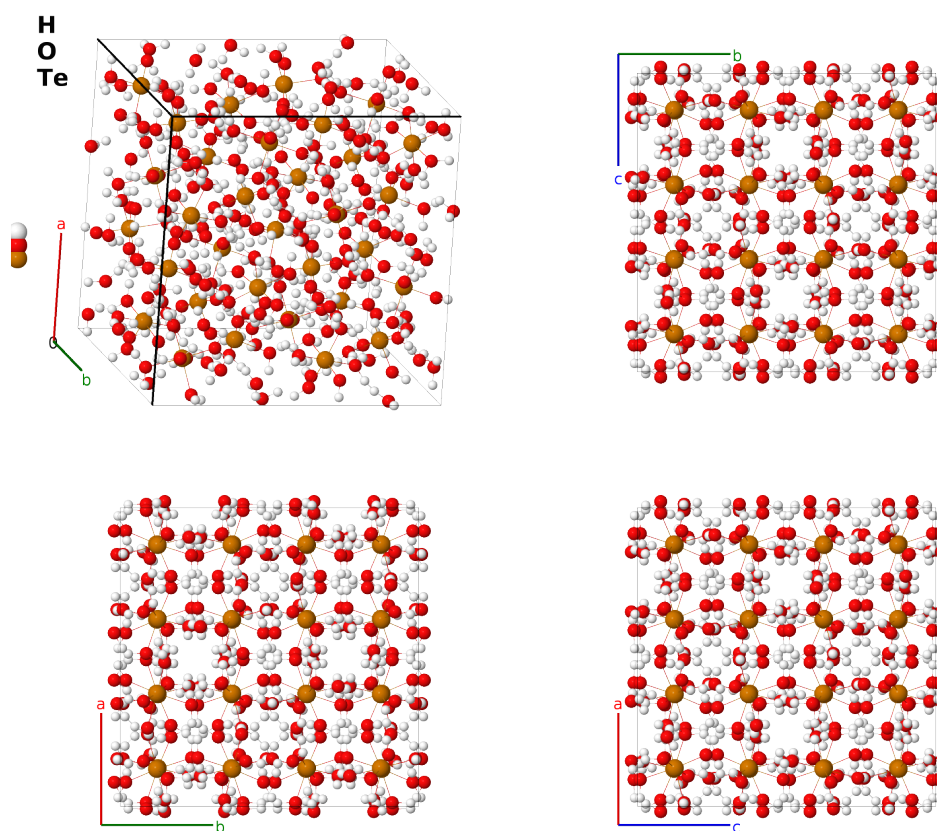
This structure previously used the label(s) A12B6C_cF608_210_4h_2h_e. Calls to these addresses will be redirected here.

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.

<https://aflow.org/prototype-encyclopedia/7K4Q>

https://aflow.org/prototype-encyclopedia/A12B6C_cF608_210_4h_2h_e-001



Prototype	H ₆ O ₆ Te
AFLOW prototype label	A12B6C_cF608_210_4h_2h_e-001
ICSD	16435
CCDC	1597015
Pearson symbol	cF608
Space group number	210
Space group symbol	<i>F</i> 4 ₁ 32

AFLOW prototype command `aflow --proto=A12B6C_cF608_210_4h_2h_e-001`
 `--params=a, x1, x2, y2, z2, x3, y3, z3, x4, y4, z4, x5, y5, z5, x6, y6, z6, x7, y7, z7`

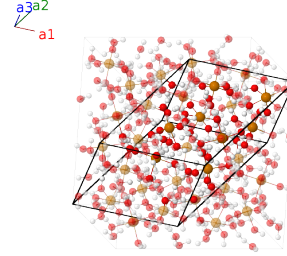
- The hydrogen sites are only half occupied. Presumably this means that there is only one hydrogen atom bound to each oxygen.
- (Kirkpatrick, 1926) originally concluded that $\text{Te}[\text{OH}]_6$ was in space group $Fd\bar{3}c$ #228, but the did not find the positions of the hydrogen atoms. The current structure appears to be the correct one.

Face-centered Cubic primitive vectors

$$\mathbf{a}_1 = \frac{1}{2}a \hat{\mathbf{y}} + \frac{1}{2}a \hat{\mathbf{z}}$$

$$\mathbf{a}_2 = \frac{1}{2}a \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{z}}$$

$$\mathbf{a}_3 = \frac{1}{2}a \hat{\mathbf{x}} + \frac{1}{2}a \hat{\mathbf{y}}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B}_1$	$= x_1 \mathbf{a}_1 + x_1 \mathbf{a}_2 + x_1 \mathbf{a}_3$	$=$	$ax_1 \hat{\mathbf{x}} + ax_1 \hat{\mathbf{y}} + ax_1 \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_2$	$= x_1 \mathbf{a}_1 + x_1 \mathbf{a}_2 - 3x_1 \mathbf{a}_3$	$=$	$-ax_1 \hat{\mathbf{x}} - ax_1 \hat{\mathbf{y}} + ax_1 \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_3$	$= x_1 \mathbf{a}_1 - 3x_1 \mathbf{a}_2 + x_1 \mathbf{a}_3$	$=$	$-ax_1 \hat{\mathbf{x}} + ax_1 \hat{\mathbf{y}} - ax_1 \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_4$	$= -3x_1 \mathbf{a}_1 + x_1 \mathbf{a}_2 + x_1 \mathbf{a}_3$	$=$	$ax_1 \hat{\mathbf{x}} - ax_1 \hat{\mathbf{y}} - ax_1 \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_5$	$= -\left(x_1 - \frac{1}{4}\right) \mathbf{a}_1 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_2 + \left(3x_1 + \frac{1}{4}\right) \mathbf{a}_3$	$=$	$a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{x}} + a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{y}} - a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_6$	$= -\left(x_1 - \frac{1}{4}\right) \mathbf{a}_1 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_2 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_3$	$=$	$-a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{x}} - a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{y}} - a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_7$	$= -\left(x_1 - \frac{1}{4}\right) \mathbf{a}_1 + \left(3x_1 + \frac{1}{4}\right) \mathbf{a}_2 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_3$	$=$	$a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{x}} - a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{y}} + a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_8$	$= \left(3x_1 + \frac{1}{4}\right) \mathbf{a}_1 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_2 - \left(x_1 - \frac{1}{4}\right) \mathbf{a}_3$	$=$	$-a\left(x_1 - \frac{1}{4}\right) \hat{\mathbf{x}} + a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{y}} + a\left(x_1 + \frac{1}{4}\right) \hat{\mathbf{z}}$	(32e)	Te I
$\mathbf{B}_9$	$= (-x_2 + y_2 + z_2) \mathbf{a}_1 + (x_2 - y_2 + z_2) \mathbf{a}_2 + (x_2 + y_2 - z_2) \mathbf{a}_3$	$=$	$ax_2 \hat{\mathbf{x}} + ay_2 \hat{\mathbf{y}} + az_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{10}$	$= (x_2 - y_2 + z_2) \mathbf{a}_1 + (-x_2 + y_2 + z_2) \mathbf{a}_2 - (x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$-ax_2 \hat{\mathbf{x}} - ay_2 \hat{\mathbf{y}} + az_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{11}$	$= (x_2 + y_2 - z_2) \mathbf{a}_1 - (x_2 + y_2 + z_2) \mathbf{a}_2 + (-x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$-ax_2 \hat{\mathbf{x}} + ay_2 \hat{\mathbf{y}} - az_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{12}$	$= -(x_2 + y_2 + z_2) \mathbf{a}_1 + (x_2 + y_2 - z_2) \mathbf{a}_2 + (x_2 - y_2 + z_2) \mathbf{a}_3$	$=$	$ax_2 \hat{\mathbf{x}} - ay_2 \hat{\mathbf{y}} - az_2 \hat{\mathbf{z}}$	(96h)	H I

$\mathbf{B}_{13}$	$=$	$(x_2 + y_2 - z_2) \mathbf{a}_1 +$ $(-x_2 + y_2 + z_2) \mathbf{a}_2 +$ $(x_2 - y_2 + z_2) \mathbf{a}_3$	$=$	$az_2 \hat{\mathbf{x}} + ax_2 \hat{\mathbf{y}} + ay_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{14}$	$=$	$-(x_2 + y_2 + z_2) \mathbf{a}_1 +$ $(x_2 - y_2 + z_2) \mathbf{a}_2 +$ $(-x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$az_2 \hat{\mathbf{x}} - ax_2 \hat{\mathbf{y}} - ay_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{15}$	$=$	$(-x_2 + y_2 + z_2) \mathbf{a}_1 +$ $(x_2 + y_2 - z_2) \mathbf{a}_2 -$ $(x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$-az_2 \hat{\mathbf{x}} - ax_2 \hat{\mathbf{y}} + ay_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{16}$	$=$	$(x_2 - y_2 + z_2) \mathbf{a}_1 -$ $(x_2 + y_2 + z_2) \mathbf{a}_2 +$ $(x_2 + y_2 - z_2) \mathbf{a}_3$	$=$	$-az_2 \hat{\mathbf{x}} + ax_2 \hat{\mathbf{y}} - ay_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{17}$	$=$	$(x_2 - y_2 + z_2) \mathbf{a}_1 +$ $(x_2 + y_2 - z_2) \mathbf{a}_2 +$ $(-x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$ay_2 \hat{\mathbf{x}} + az_2 \hat{\mathbf{y}} + ax_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{18}$	$=$	$(-x_2 + y_2 + z_2) \mathbf{a}_1 -$ $(x_2 + y_2 + z_2) \mathbf{a}_2 +$ $(x_2 - y_2 + z_2) \mathbf{a}_3$	$=$	$-ay_2 \hat{\mathbf{x}} + az_2 \hat{\mathbf{y}} - ax_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{19}$	$=$	$-(x_2 + y_2 + z_2) \mathbf{a}_1 +$ $(-x_2 + y_2 + z_2) \mathbf{a}_2 +$ $(x_2 + y_2 - z_2) \mathbf{a}_3$	$=$	$ay_2 \hat{\mathbf{x}} - az_2 \hat{\mathbf{y}} - ax_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{20}$	$=$	$(x_2 + y_2 - z_2) \mathbf{a}_1 +$ $(x_2 - y_2 + z_2) \mathbf{a}_2 -$ $(x_2 + y_2 + z_2) \mathbf{a}_3$	$=$	$-ay_2 \hat{\mathbf{x}} - az_2 \hat{\mathbf{y}} + ax_2 \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{21}$	$=$	$(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_2 + \frac{1}{4}) \hat{\mathbf{x}} + a(x_2 + \frac{1}{4}) \hat{\mathbf{y}} - a(z_2 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{22}$	$=$	$-(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_2 - \frac{1}{4}) \hat{\mathbf{x}} - a(x_2 - \frac{1}{4}) \hat{\mathbf{y}} - a(z_2 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{23}$	$=$	$-(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_2 + \frac{1}{4}) \hat{\mathbf{x}} - a(x_2 - \frac{1}{4}) \hat{\mathbf{y}} + a(z_2 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{24}$	$=$	$(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_2 - \frac{1}{4}) \hat{\mathbf{x}} + a(x_2 + \frac{1}{4}) \hat{\mathbf{y}} + a(z_2 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{25}$	$=$	$-(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_2 + \frac{1}{4}) \hat{\mathbf{x}} + a(z_2 + \frac{1}{4}) \hat{\mathbf{y}} - a(y_2 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{26}$	$=$	$(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_2 - \frac{1}{4}) \hat{\mathbf{x}} + a(z_2 + \frac{1}{4}) \hat{\mathbf{y}} + a(y_2 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{27}$	$=$	$(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_2 + y_2 - z_2 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_2 - \frac{1}{4}) \hat{\mathbf{x}} - a(z_2 - \frac{1}{4}) \hat{\mathbf{y}} - a(y_2 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{28}$	$=$	$-(x_2 - y_2 + z_2 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_2 + y_2 + z_2 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_2 - y_2 - z_2 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_2 + \frac{1}{4}) \hat{\mathbf{x}} - a(z_2 - \frac{1}{4}) \hat{\mathbf{y}} + a(y_2 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H I

$\mathbf{B}_{29} =$	$-\left(x_2 - y_2 + z_2 - \frac{1}{4}\right) \mathbf{a}_1 -$ $\left(x_2 + y_2 - z_2 - \frac{1}{4}\right) \mathbf{a}_2 +$ $\left(x_2 + y_2 + z_2 + \frac{1}{4}\right) \mathbf{a}_3$	$=$	$a\left(z_2 + \frac{1}{4}\right) \hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right) \hat{\mathbf{y}} - a\left(x_2 - \frac{1}{4}\right) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{30} =$	$\left(x_2 - y_2 - z_2 + \frac{1}{4}\right) \mathbf{a}_1 +$ $\left(x_2 + y_2 + z_2 + \frac{1}{4}\right) \mathbf{a}_2 -$ $\left(x_2 + y_2 - z_2 - \frac{1}{4}\right) \mathbf{a}_3$	$=$	$a\left(z_2 + \frac{1}{4}\right) \hat{\mathbf{x}} - a\left(y_2 - \frac{1}{4}\right) \hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{31} =$	$\left(x_2 + y_2 + z_2 + \frac{1}{4}\right) \mathbf{a}_1 +$ $\left(x_2 - y_2 - z_2 + \frac{1}{4}\right) \mathbf{a}_2 -$ $\left(x_2 - y_2 + z_2 - \frac{1}{4}\right) \mathbf{a}_3$	$=$	$-a\left(z_2 - \frac{1}{4}\right) \hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right) \hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{32} =$	$-\left(x_2 + y_2 - z_2 - \frac{1}{4}\right) \mathbf{a}_1 -$ $\left(x_2 - y_2 + z_2 - \frac{1}{4}\right) \mathbf{a}_2 +$ $\left(x_2 - y_2 - z_2 + \frac{1}{4}\right) \mathbf{a}_3$	$=$	$-a\left(z_2 - \frac{1}{4}\right) \hat{\mathbf{x}} - a\left(y_2 - \frac{1}{4}\right) \hat{\mathbf{y}} - a\left(x_2 - \frac{1}{4}\right) \hat{\mathbf{z}}$	(96h)	H I
$\mathbf{B}_{33} =$	$\left(-x_3 + y_3 + z_3\right) \mathbf{a}_1 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_2 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_3$	$=$	$ax_3 \hat{\mathbf{x}} + ay_3 \hat{\mathbf{y}} + az_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{34} =$	$\left(x_3 - y_3 + z_3\right) \mathbf{a}_1 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_2 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$-ax_3 \hat{\mathbf{x}} - ay_3 \hat{\mathbf{y}} + az_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{35} =$	$\left(x_3 + y_3 - z_3\right) \mathbf{a}_1 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_2 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$-ax_3 \hat{\mathbf{x}} + ay_3 \hat{\mathbf{y}} - az_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{36} =$	$-\left(x_3 + y_3 + z_3\right) \mathbf{a}_1 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_2 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_3$	$=$	$ax_3 \hat{\mathbf{x}} - ay_3 \hat{\mathbf{y}} - az_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{37} =$	$\left(x_3 + y_3 - z_3\right) \mathbf{a}_1 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_2 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_3$	$=$	$az_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} + ay_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{38} =$	$-\left(x_3 + y_3 + z_3\right) \mathbf{a}_1 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_2 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$az_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} - ay_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{39} =$	$\left(-x_3 + y_3 + z_3\right) \mathbf{a}_1 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_2 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$-az_3 \hat{\mathbf{x}} - ax_3 \hat{\mathbf{y}} + ay_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{40} =$	$\left(x_3 - y_3 + z_3\right) \mathbf{a}_1 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_2 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_3$	$=$	$-az_3 \hat{\mathbf{x}} + ax_3 \hat{\mathbf{y}} - ay_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{41} =$	$\left(x_3 - y_3 + z_3\right) \mathbf{a}_1 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_2 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$ay_3 \hat{\mathbf{x}} + az_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{42} =$	$\left(-x_3 + y_3 + z_3\right) \mathbf{a}_1 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_2 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_3$	$=$	$-ay_3 \hat{\mathbf{x}} + az_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{43} =$	$-\left(x_3 + y_3 + z_3\right) \mathbf{a}_1 +$ $\left(-x_3 + y_3 + z_3\right) \mathbf{a}_2 +$ $\left(x_3 + y_3 - z_3\right) \mathbf{a}_3$	$=$	$ay_3 \hat{\mathbf{x}} - az_3 \hat{\mathbf{y}} - ax_3 \hat{\mathbf{z}}$	(96h)	H II
$\mathbf{B}_{44} =$	$\left(x_3 + y_3 - z_3\right) \mathbf{a}_1 +$ $\left(x_3 - y_3 + z_3\right) \mathbf{a}_2 -$ $\left(x_3 + y_3 + z_3\right) \mathbf{a}_3$	$=$	$-ay_3 \hat{\mathbf{x}} - az_3 \hat{\mathbf{y}} + ax_3 \hat{\mathbf{z}}$	(96h)	H II

$\mathbf{B}_{61} =$	$(x_4 + y_4 - z_4) \mathbf{a}_1 +$ $(-x_4 + y_4 + z_4) \mathbf{a}_2 +$ $(x_4 - y_4 + z_4) \mathbf{a}_3$	$=$	$az_4 \hat{\mathbf{x}} + ax_4 \hat{\mathbf{y}} + ay_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{62} =$	$-(x_4 + y_4 + z_4) \mathbf{a}_1 +$ $(x_4 - y_4 + z_4) \mathbf{a}_2 +$ $(-x_4 + y_4 + z_4) \mathbf{a}_3$	$=$	$az_4 \hat{\mathbf{x}} - ax_4 \hat{\mathbf{y}} - ay_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{63} =$	$(-x_4 + y_4 + z_4) \mathbf{a}_1 +$ $(x_4 + y_4 - z_4) \mathbf{a}_2 -$ $(x_4 + y_4 + z_4) \mathbf{a}_3$	$=$	$-az_4 \hat{\mathbf{x}} - ax_4 \hat{\mathbf{y}} + ay_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{64} =$	$(x_4 - y_4 + z_4) \mathbf{a}_1 -$ $(x_4 + y_4 + z_4) \mathbf{a}_2 +$ $(x_4 + y_4 - z_4) \mathbf{a}_3$	$=$	$-az_4 \hat{\mathbf{x}} + ax_4 \hat{\mathbf{y}} - ay_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{65} =$	$(x_4 - y_4 + z_4) \mathbf{a}_1 +$ $(x_4 + y_4 - z_4) \mathbf{a}_2 +$ $(-x_4 + y_4 + z_4) \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{x}} + az_4 \hat{\mathbf{y}} + ax_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{66} =$	$(-x_4 + y_4 + z_4) \mathbf{a}_1 -$ $(x_4 + y_4 + z_4) \mathbf{a}_2 +$ $(x_4 - y_4 + z_4) \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{x}} + az_4 \hat{\mathbf{y}} - ax_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{67} =$	$-(x_4 + y_4 + z_4) \mathbf{a}_1 +$ $(-x_4 + y_4 + z_4) \mathbf{a}_2 +$ $(x_4 + y_4 - z_4) \mathbf{a}_3$	$=$	$ay_4 \hat{\mathbf{x}} - az_4 \hat{\mathbf{y}} - ax_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{68} =$	$(x_4 + y_4 - z_4) \mathbf{a}_1 +$ $(x_4 - y_4 + z_4) \mathbf{a}_2 -$ $(x_4 + y_4 + z_4) \mathbf{a}_3$	$=$	$-ay_4 \hat{\mathbf{x}} - az_4 \hat{\mathbf{y}} + ax_4 \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{69} =$	$(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_4 + \frac{1}{4}) \hat{\mathbf{x}} + a(x_4 + \frac{1}{4}) \hat{\mathbf{y}} - a(z_4 - \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{70} =$	$-(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_4 - \frac{1}{4}) \hat{\mathbf{x}} - a(x_4 - \frac{1}{4}) \hat{\mathbf{y}} - a(z_4 - \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{71} =$	$-(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_4 + \frac{1}{4}) \hat{\mathbf{x}} - a(x_4 - \frac{1}{4}) \hat{\mathbf{y}} + a(z_4 + \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{72} =$	$(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_4 - \frac{1}{4}) \hat{\mathbf{x}} + a(x_4 + \frac{1}{4}) \hat{\mathbf{y}} + a(z_4 + \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{73} =$	$-(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_4 + \frac{1}{4}) \hat{\mathbf{x}} + a(z_4 + \frac{1}{4}) \hat{\mathbf{y}} - a(y_4 - \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{74} =$	$(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_4 - \frac{1}{4}) \hat{\mathbf{x}} + a(z_4 + \frac{1}{4}) \hat{\mathbf{y}} + a(y_4 + \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{75} =$	$(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_4 - \frac{1}{4}) \hat{\mathbf{x}} - a(z_4 - \frac{1}{4}) \hat{\mathbf{y}} - a(y_4 - \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III
$\mathbf{B}_{76} =$	$-(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_4 + \frac{1}{4}) \hat{\mathbf{x}} - a(z_4 - \frac{1}{4}) \hat{\mathbf{y}} + a(y_4 + \frac{1}{4}) \hat{\mathbf{z}}$	$(96h)$	H III

$\mathbf{B}_{77} =$	$-(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_4 + \frac{1}{4}) \hat{\mathbf{x}} + a(y_4 + \frac{1}{4}) \hat{\mathbf{y}} - a(x_4 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H III
$\mathbf{B}_{78} =$	$(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_4 + \frac{1}{4}) \hat{\mathbf{x}} - a(y_4 - \frac{1}{4}) \hat{\mathbf{y}} + a(x_4 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H III
$\mathbf{B}_{79} =$	$(x_4 + y_4 + z_4 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_4 - \frac{1}{4}) \hat{\mathbf{x}} + a(y_4 + \frac{1}{4}) \hat{\mathbf{y}} + a(x_4 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H III
$\mathbf{B}_{80} =$	$-(x_4 + y_4 - z_4 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_4 - y_4 + z_4 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_4 - y_4 - z_4 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_4 - \frac{1}{4}) \hat{\mathbf{x}} - a(y_4 - \frac{1}{4}) \hat{\mathbf{y}} - a(x_4 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H III
$\mathbf{B}_{81} =$	$(-x_5 + y_5 + z_5) \mathbf{a}_1 +$ $(x_5 - y_5 + z_5) \mathbf{a}_2 +$ $(x_5 + y_5 - z_5) \mathbf{a}_3$	$=$	$ax_5 \hat{\mathbf{x}} + ay_5 \hat{\mathbf{y}} + az_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{82} =$	$(x_5 - y_5 + z_5) \mathbf{a}_1 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_2 -$ $(x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$-ax_5 \hat{\mathbf{x}} - ay_5 \hat{\mathbf{y}} + az_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{83} =$	$(x_5 + y_5 - z_5) \mathbf{a}_1 -$ $(x_5 + y_5 + z_5) \mathbf{a}_2 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$-ax_5 \hat{\mathbf{x}} + ay_5 \hat{\mathbf{y}} - az_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{84} =$	$-(x_5 + y_5 + z_5) \mathbf{a}_1 +$ $(x_5 + y_5 - z_5) \mathbf{a}_2 +$ $(x_5 - y_5 + z_5) \mathbf{a}_3$	$=$	$ax_5 \hat{\mathbf{x}} - ay_5 \hat{\mathbf{y}} - az_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{85} =$	$(x_5 + y_5 - z_5) \mathbf{a}_1 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_2 +$ $(x_5 - y_5 + z_5) \mathbf{a}_3$	$=$	$az_5 \hat{\mathbf{x}} + ax_5 \hat{\mathbf{y}} + ay_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{86} =$	$-(x_5 + y_5 + z_5) \mathbf{a}_1 +$ $(x_5 - y_5 + z_5) \mathbf{a}_2 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$az_5 \hat{\mathbf{x}} - ax_5 \hat{\mathbf{y}} - ay_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{87} =$	$(-x_5 + y_5 + z_5) \mathbf{a}_1 +$ $(x_5 + y_5 - z_5) \mathbf{a}_2 -$ $(x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$-az_5 \hat{\mathbf{x}} - ax_5 \hat{\mathbf{y}} + ay_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{88} =$	$(x_5 - y_5 + z_5) \mathbf{a}_1 -$ $(x_5 + y_5 + z_5) \mathbf{a}_2 +$ $(x_5 + y_5 - z_5) \mathbf{a}_3$	$=$	$-az_5 \hat{\mathbf{x}} + ax_5 \hat{\mathbf{y}} - ay_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{89} =$	$(x_5 - y_5 + z_5) \mathbf{a}_1 +$ $(x_5 + y_5 - z_5) \mathbf{a}_2 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{x}} + az_5 \hat{\mathbf{y}} + ax_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{90} =$	$(-x_5 + y_5 + z_5) \mathbf{a}_1 -$ $(x_5 + y_5 + z_5) \mathbf{a}_2 +$ $(x_5 - y_5 + z_5) \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{x}} + az_5 \hat{\mathbf{y}} - ax_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{91} =$	$-(x_5 + y_5 + z_5) \mathbf{a}_1 +$ $(-x_5 + y_5 + z_5) \mathbf{a}_2 +$ $(x_5 + y_5 - z_5) \mathbf{a}_3$	$=$	$ay_5 \hat{\mathbf{x}} - az_5 \hat{\mathbf{y}} - ax_5 \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{92} =$	$(x_5 + y_5 - z_5) \mathbf{a}_1 +$ $(x_5 - y_5 + z_5) \mathbf{a}_2 -$ $(x_5 + y_5 + z_5) \mathbf{a}_3$	$=$	$-ay_5 \hat{\mathbf{x}} - az_5 \hat{\mathbf{y}} + ax_5 \hat{\mathbf{z}}$	(96h)	H IV

$\mathbf{B}_{93} =$	$(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_5 + \frac{1}{4}) \hat{\mathbf{x}} + a(x_5 + \frac{1}{4}) \hat{\mathbf{y}} - a(z_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{94} =$	$-(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_5 - \frac{1}{4}) \hat{\mathbf{x}} - a(x_5 - \frac{1}{4}) \hat{\mathbf{y}} - a(z_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{95} =$	$-(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_5 + \frac{1}{4}) \hat{\mathbf{x}} - a(x_5 - \frac{1}{4}) \hat{\mathbf{y}} + a(z_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{96} =$	$(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_5 - \frac{1}{4}) \hat{\mathbf{x}} + a(x_5 + \frac{1}{4}) \hat{\mathbf{y}} + a(z_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{97} =$	$-(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_5 + \frac{1}{4}) \hat{\mathbf{x}} + a(z_5 + \frac{1}{4}) \hat{\mathbf{y}} - a(y_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{98} =$	$(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_5 - \frac{1}{4}) \hat{\mathbf{x}} + a(z_5 + \frac{1}{4}) \hat{\mathbf{y}} + a(y_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{99} =$	$(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_5 - \frac{1}{4}) \hat{\mathbf{x}} - a(z_5 - \frac{1}{4}) \hat{\mathbf{y}} - a(y_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{100} =$	$-(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_5 + \frac{1}{4}) \hat{\mathbf{x}} - a(z_5 - \frac{1}{4}) \hat{\mathbf{y}} + a(y_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{101} =$	$-(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_5 + \frac{1}{4}) \hat{\mathbf{x}} + a(y_5 + \frac{1}{4}) \hat{\mathbf{y}} - a(x_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{102} =$	$(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_5 + \frac{1}{4}) \hat{\mathbf{x}} - a(y_5 - \frac{1}{4}) \hat{\mathbf{y}} + a(x_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{103} =$	$(x_5 + y_5 + z_5 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_5 - \frac{1}{4}) \hat{\mathbf{x}} + a(y_5 + \frac{1}{4}) \hat{\mathbf{y}} + a(x_5 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{104} =$	$-(x_5 + y_5 - z_5 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_5 - y_5 + z_5 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_5 - y_5 - z_5 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_5 - \frac{1}{4}) \hat{\mathbf{x}} - a(y_5 - \frac{1}{4}) \hat{\mathbf{y}} - a(x_5 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	H IV
$\mathbf{B}_{105} =$	$(-x_6 + y_6 + z_6) \mathbf{a}_1 +$ $(x_6 - y_6 + z_6) \mathbf{a}_2 +$ $(x_6 + y_6 - z_6) \mathbf{a}_3$	$=$	$ax_6 \hat{\mathbf{x}} + ay_6 \hat{\mathbf{y}} + az_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{106} =$	$(x_6 - y_6 + z_6) \mathbf{a}_1 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_2 -$ $(x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$-ax_6 \hat{\mathbf{x}} - ay_6 \hat{\mathbf{y}} + az_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{107} =$	$(x_6 + y_6 - z_6) \mathbf{a}_1 -$ $(x_6 + y_6 + z_6) \mathbf{a}_2 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$-ax_6 \hat{\mathbf{x}} + ay_6 \hat{\mathbf{y}} - az_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{108} =$	$-(x_6 + y_6 + z_6) \mathbf{a}_1 +$ $(x_6 + y_6 - z_6) \mathbf{a}_2 +$ $(x_6 - y_6 + z_6) \mathbf{a}_3$	$=$	$ax_6 \hat{\mathbf{x}} - ay_6 \hat{\mathbf{y}} - az_6 \hat{\mathbf{z}}$	(96h)	O I

$\mathbf{B}_{109} =$	$(x_6 + y_6 - z_6) \mathbf{a}_1 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_2 +$ $(x_6 - y_6 + z_6) \mathbf{a}_3$	$=$	$az_6 \hat{\mathbf{x}} + ax_6 \hat{\mathbf{y}} + ay_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{110} =$	$-(x_6 + y_6 + z_6) \mathbf{a}_1 +$ $(x_6 - y_6 + z_6) \mathbf{a}_2 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$az_6 \hat{\mathbf{x}} - ax_6 \hat{\mathbf{y}} - ay_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{111} =$	$(-x_6 + y_6 + z_6) \mathbf{a}_1 +$ $(x_6 + y_6 - z_6) \mathbf{a}_2 -$ $(x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$-az_6 \hat{\mathbf{x}} - ax_6 \hat{\mathbf{y}} + ay_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{112} =$	$(x_6 - y_6 + z_6) \mathbf{a}_1 -$ $(x_6 + y_6 + z_6) \mathbf{a}_2 +$ $(x_6 + y_6 - z_6) \mathbf{a}_3$	$=$	$-az_6 \hat{\mathbf{x}} + ax_6 \hat{\mathbf{y}} - ay_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{113} =$	$(x_6 - y_6 + z_6) \mathbf{a}_1 +$ $(x_6 + y_6 - z_6) \mathbf{a}_2 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{x}} + az_6 \hat{\mathbf{y}} + ax_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{114} =$	$(-x_6 + y_6 + z_6) \mathbf{a}_1 -$ $(x_6 + y_6 + z_6) \mathbf{a}_2 +$ $(x_6 - y_6 + z_6) \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{x}} + az_6 \hat{\mathbf{y}} - ax_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{115} =$	$-(x_6 + y_6 + z_6) \mathbf{a}_1 +$ $(-x_6 + y_6 + z_6) \mathbf{a}_2 +$ $(x_6 + y_6 - z_6) \mathbf{a}_3$	$=$	$ay_6 \hat{\mathbf{x}} - az_6 \hat{\mathbf{y}} - ax_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{116} =$	$(x_6 + y_6 - z_6) \mathbf{a}_1 +$ $(x_6 - y_6 + z_6) \mathbf{a}_2 -$ $(x_6 + y_6 + z_6) \mathbf{a}_3$	$=$	$-ay_6 \hat{\mathbf{x}} - az_6 \hat{\mathbf{y}} + ax_6 \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{117} =$	$(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_6 + \frac{1}{4}) \hat{\mathbf{x}} + a(x_6 + \frac{1}{4}) \hat{\mathbf{y}} - a(z_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{118} =$	$-(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_6 - \frac{1}{4}) \hat{\mathbf{x}} - a(x_6 - \frac{1}{4}) \hat{\mathbf{y}} - a(z_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{119} =$	$-(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(y_6 + \frac{1}{4}) \hat{\mathbf{x}} - a(x_6 - \frac{1}{4}) \hat{\mathbf{y}} + a(z_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{120} =$	$(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(y_6 - \frac{1}{4}) \hat{\mathbf{x}} + a(x_6 + \frac{1}{4}) \hat{\mathbf{y}} + a(z_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{121} =$	$-(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_6 + \frac{1}{4}) \hat{\mathbf{x}} + a(z_6 + \frac{1}{4}) \hat{\mathbf{y}} - a(y_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{122} =$	$(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_6 - \frac{1}{4}) \hat{\mathbf{x}} + a(z_6 + \frac{1}{4}) \hat{\mathbf{y}} + a(y_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{123} =$	$(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(x_6 - \frac{1}{4}) \hat{\mathbf{x}} - a(z_6 - \frac{1}{4}) \hat{\mathbf{y}} - a(y_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{124} =$	$-(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(x_6 + \frac{1}{4}) \hat{\mathbf{x}} - a(z_6 - \frac{1}{4}) \hat{\mathbf{y}} + a(y_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I

$\mathbf{B}_{125} =$	$-(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_6 + \frac{1}{4}) \hat{\mathbf{x}} + a(y_6 + \frac{1}{4}) \hat{\mathbf{y}} - a(x_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{126} =$	$(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$a(z_6 + \frac{1}{4}) \hat{\mathbf{x}} - a(y_6 - \frac{1}{4}) \hat{\mathbf{y}} + a(x_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{127} =$	$(x_6 + y_6 + z_6 + \frac{1}{4}) \mathbf{a}_1 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_2 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_6 - \frac{1}{4}) \hat{\mathbf{x}} + a(y_6 + \frac{1}{4}) \hat{\mathbf{y}} + a(x_6 + \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{128} =$	$-(x_6 + y_6 - z_6 - \frac{1}{4}) \mathbf{a}_1 -$ $(x_6 - y_6 + z_6 - \frac{1}{4}) \mathbf{a}_2 +$ $(x_6 - y_6 - z_6 + \frac{1}{4}) \mathbf{a}_3$	$=$	$-a(z_6 - \frac{1}{4}) \hat{\mathbf{x}} - a(y_6 - \frac{1}{4}) \hat{\mathbf{y}} - a(x_6 - \frac{1}{4}) \hat{\mathbf{z}}$	(96h)	O I
$\mathbf{B}_{129} =$	$(-x_7 + y_7 + z_7) \mathbf{a}_1 +$ $(x_7 - y_7 + z_7) \mathbf{a}_2 +$ $(x_7 + y_7 - z_7) \mathbf{a}_3$	$=$	$ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{130} =$	$(x_7 - y_7 + z_7) \mathbf{a}_1 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_2 -$ $(x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$-ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} + az_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{131} =$	$(x_7 + y_7 - z_7) \mathbf{a}_1 -$ $(x_7 + y_7 + z_7) \mathbf{a}_2 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$-ax_7 \hat{\mathbf{x}} + ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{132} =$	$-(x_7 + y_7 + z_7) \mathbf{a}_1 +$ $(x_7 + y_7 - z_7) \mathbf{a}_2 +$ $(x_7 - y_7 + z_7) \mathbf{a}_3$	$=$	$ax_7 \hat{\mathbf{x}} - ay_7 \hat{\mathbf{y}} - az_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{133} =$	$(x_7 + y_7 - z_7) \mathbf{a}_1 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_2 +$ $(x_7 - y_7 + z_7) \mathbf{a}_3$	$=$	$az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{134} =$	$-(x_7 + y_7 + z_7) \mathbf{a}_1 +$ $(x_7 - y_7 + z_7) \mathbf{a}_2 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{135} =$	$(-x_7 + y_7 + z_7) \mathbf{a}_1 +$ $(x_7 + y_7 - z_7) \mathbf{a}_2 -$ $(x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$-az_7 \hat{\mathbf{x}} - ax_7 \hat{\mathbf{y}} + ay_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{136} =$	$(x_7 - y_7 + z_7) \mathbf{a}_1 -$ $(x_7 + y_7 + z_7) \mathbf{a}_2 +$ $(x_7 + y_7 - z_7) \mathbf{a}_3$	$=$	$-az_7 \hat{\mathbf{x}} + ax_7 \hat{\mathbf{y}} - ay_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{137} =$	$(x_7 - y_7 + z_7) \mathbf{a}_1 +$ $(x_7 + y_7 - z_7) \mathbf{a}_2 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{138} =$	$(-x_7 + y_7 + z_7) \mathbf{a}_1 -$ $(x_7 + y_7 + z_7) \mathbf{a}_2 +$ $(x_7 - y_7 + z_7) \mathbf{a}_3$	$=$	$-ay_7 \hat{\mathbf{x}} + az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{139} =$	$-(x_7 + y_7 + z_7) \mathbf{a}_1 +$ $(-x_7 + y_7 + z_7) \mathbf{a}_2 +$ $(x_7 + y_7 - z_7) \mathbf{a}_3$	$=$	$ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} - ax_7 \hat{\mathbf{z}}$	(96h)	O II
$\mathbf{B}_{140} =$	$(x_7 + y_7 - z_7) \mathbf{a}_1 +$ $(x_7 - y_7 + z_7) \mathbf{a}_2 -$ $(x_7 + y_7 + z_7) \mathbf{a}_3$	$=$	$-ay_7 \hat{\mathbf{x}} - az_7 \hat{\mathbf{y}} + ax_7 \hat{\mathbf{z}}$	(96h)	O II

$$\begin{aligned}
\mathbf{B}_{141} &= \begin{pmatrix} x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{142} &= - \begin{pmatrix} x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= -a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{143} &= - \begin{pmatrix} x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{144} &= \begin{pmatrix} x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= -a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{145} &= - \begin{pmatrix} x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{146} &= \begin{pmatrix} x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= -a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{147} &= \begin{pmatrix} x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= -a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{148} &= - \begin{pmatrix} x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{149} &= - \begin{pmatrix} x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{150} &= \begin{pmatrix} x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 + y_7 - z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= a \left(z_7 + \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{151} &= \begin{pmatrix} x_7 + y_7 + z_7 + \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \end{pmatrix} \mathbf{a}_1 + &= -a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{x}} + a \left(y_7 + \frac{1}{4} \right) \hat{\mathbf{y}} + a \left(x_7 + \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II} \\
\mathbf{B}_{152} &= - \begin{pmatrix} x_7 + y_7 - z_7 - \frac{1}{4} \\ x_7 - y_7 + z_7 - \frac{1}{4} \\ x_7 - y_7 - z_7 + \frac{1}{4} \end{pmatrix} \mathbf{a}_1 - &= -a \left(z_7 - \frac{1}{4} \right) \hat{\mathbf{x}} - a \left(y_7 - \frac{1}{4} \right) \hat{\mathbf{y}} - a \left(x_7 - \frac{1}{4} \right) \hat{\mathbf{z}} & (96h) & \text{O II}
\end{aligned}$$

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