

1.1. PRINTED SYMBOLS FOR CRYSTALLOGRAPHIC ITEMS

1.1.5. Spaces

Printed symbol	Explanation	Printed symbol	Explanation
$n$	Dimension of a space	$\mathbb{r}$ , or $\mathbb{x}$	Position vector (of a point or an atom), described by an $(n + 1) \times 1$ 'augmented' column
$X$	Point	$(\mathbf{P}, \mathbf{p})$ ; or $(\mathbf{S}, \mathbf{s})$	Transformation of the coordinate system, described by an $(n \times n)$ matrix $\mathbf{P}$ or $\mathbf{S}$ and an $(n \times 1)$ column $\mathbf{p}$ or $\mathbf{s}$
$\tilde{X}$	Image of a point $X$ after a symmetry operation (motion)	$\mathbb{P}$ ; or $\mathbb{S}$	Transformation of the coordinate system, described by an $(n + 1) \times (n + 1)$ 'augmented' matrix
$E^n$	(Euclidean) point space of dimension $n$	$(\mathbf{Q}, \mathbf{q})$	Inverse transformation of $(\mathbf{P}, \mathbf{p})$
$\mathbf{V}^n$	Vector space of dimension $n$	$\mathbb{Q}$	Inverse transformation of $\mathbb{P}$
$\mathbf{L}$	Vector lattice		
$L$	Point lattice		

1.1.6. Motions and matrices

Printed symbol	Explanation
$\mathbf{W}; \mathbf{M}$	Symmetry operation; motion
$(\mathbf{W}, \mathbf{w})$	Symmetry operation $\mathbf{W}$ , described by an $(n \times n)$ matrix $\mathbf{W}$ and an $(n \times 1)$ column $\mathbf{w}$
$\mathbb{W}$	Symmetry operation $\mathbf{W}$ , described by an $(n + 1) \times (n + 1)$ 'augmented' matrix
$\mathbf{I}$	$(n \times n)$ unit matrix
$\mathbf{T}$	Translation
$(\mathbf{I}, \mathbf{t})$	Translation $\mathbf{T}$ , described by the $(n \times n)$ unit matrix $\mathbf{I}$ and an $(n \times 1)$ column $\mathbf{t}$
$\mathbb{T}$	Translation $\mathbf{T}$ , described by an $(n + 1) \times (n + 1)$ 'augmented' matrix
$\mathbf{l}$	Identity operation
$(\mathbf{I}, \mathbf{o})$	Identity operation $\mathbf{l}$ , described by the $(n \times n)$ unit matrix $\mathbf{I}$ and the $(n \times 1)$ column $\mathbf{o}$
$\mathbb{l}$	Identity operation $\mathbf{l}$ , described by the $(n + 1) \times (n + 1)$ 'augmented' unit matrix

1.1.7. Groups

Printed symbol	Explanation
$\mathcal{G}$	Space group
$\mathcal{T}$	Group of all translations of $\mathcal{G}$
$\mathcal{S}$	Supergroup; also used for site-symmetry group
$\mathcal{H}$	Subgroup
$\mathcal{E}$	Group of all motions (Euclidean group)
$\mathcal{A}$	Group of all affine mappings (affine group)
$\mathcal{N}_{\mathcal{E}}(\mathcal{G})$ ; or $\mathcal{N}_{\mathcal{A}}(\mathcal{G})$	Euclidean or affine normalizer of a space group $\mathcal{G}$
$\mathcal{P}$	Point group
$\mathcal{C}$	<i>Eigensymmetry</i> (inherent symmetry) group
$[i]$	Index $i$ of sub- or supergroup
$\mathcal{G}$	Element of a space group $\mathcal{G}$