

List of symbols

Symbol	Meaning	Example
\in	Belongs to	$g \in G$
\ni	Is an element of	$G \ni g$
\notin	Does not belong to	$g \notin H$
\notin	Is not an element of	$H \notin g$
\subseteq	Subset, subgroup	$H \subseteq G$
\supseteq	Superset, supergroup	$G \supseteq H$
\subset, \subsetneq	Proper subset, proper subgroup	$H \subset G, H \subsetneq G$
\supset, \supsetneq	Proper superset, proper supergroup	$G \supset H, G \supsetneq H$
$\not\subset$	Not a subset, not a subgroup	$H \not\subset G$
$\not\supset$	Not a superset, not a supergroup	$G \not\supset H$
\triangleleft	Normal (invariant) subgroup	$H \triangleleft G$
\triangleright	Normal (invariant) subgroup (opposite direction)	$G \triangleright H$
\forall	Any element of	$\forall g \in G$
\exists	Exists as element of	$\exists g \in G$
$\exists!$	Unique element of	$\exists! g \in G$
\cap	Intersection of sets / groups	$\cap_i G_i$
\cup	Union of sets / groups	$\cup_i G_i$
$\{ \}$	{Element Condition the element satisfies}	$\{h h' = ghg^{-1}\}$
\circ	Binary operation, composition of functions	$u \circ v \rightarrow w$
\mathfrak{R}	Relation	$S \mathfrak{R} S'$
$\not\mathfrak{R}$	Absence of relation	$S \not\mathfrak{R} S'$
\cdot	Internal or dot product	$\mathbf{a} \cdot \mathbf{b}$
\times	External or cross product	$\mathbf{a} \times \mathbf{b}$
\wedge	Wedge product (not used in this course)	$\mathbf{a} \wedge \mathbf{b}$
\rightarrow	Total or global mapping	$G \rightarrow H$
\mapsto	Partial mapping	$G \mapsto H$
$:=$	Definition	
\mathbb{N}	Natural numbers (zero excluded: \mathbb{N}^*)	
\mathbb{Z}	Integer numbers (zero excluded: \mathbb{Z}^*)	
\mathbb{Q}	Rational numbers ((zero excluded: \mathbb{Q}^*)	
\mathbb{R}	Real numbers (zero excluded: \mathbb{R}^*)	
\mathbb{C}	Complex numbers (zero excluded: \mathbb{C}^*)	
\emptyset	Null or empty set	