

GraphTheorySymbol Memo

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Add in your preamble: `\usepackage{graph-theory-symbol}`.

For clarity, below we only show long macro names and short macro names; see Detailed usage section for intermediate length macro names.

Long name	Short name	Result	In context
<code>\GTSadjacency/</code>	<code>\GTSa/</code>		$u \text{ --- } v$
<code>\GTSadjacencyRelation/</code>	<code>\GTSaR/</code>		$u \text{ --- } v$
<code>\GTSunadjacency/</code>	<code>\GTSu/</code>		$u \text{ --- } v$
<code>\GTSunadjacencyRelation/</code>	<code>\GTSuR/</code>		$u \text{ --- } v$
<code>\GTSdirectedAdjacencyUp/</code>	<code>\GTSdAU/</code>		$u \text{ --> } v$
<code>\GTSdirectedAdjacencyUpRelation/</code>	<code>\GTSdAUR/</code>		$u \text{ --> } v$
<code>\GTSnegatedDirectedAdjacencyUp/</code>	<code>\GTSnDAU/</code>		$u \not\text{-->} v$
<code>\GTSnegatedDirectedAdjacencyUpRelation/</code>	<code>\GTSnDAUR/</code>		$u \not\text{-->} v$
<code>\GTSdirectedAdjacencyDown/</code>	<code>\GTSdAD/</code>		$u \text{ --> } v$
<code>\GTSdirectedAdjacencyDownRelation/</code>	<code>\GTSdADR/</code>		$u \text{ --> } v$
<code>\GTSnegatedDirectedAdjacencyDown/</code>	<code>\GTSnDAD/</code>		$u \not\text{-->} v$
<code>\GTSnegatedDirectedAdjacencyDownRelation/</code>	<code>\GTSnDADR/</code>		$u \not\text{-->} v$
<code>\GTSincidence/</code>	<code>\GTSi/</code>		$v \text{ --- } e$
<code>\GTSincidenceRelation/</code>	<code>\GTSiR/</code>		$v \text{ --- } e$
<code>\GTSnegatedIncidence/</code>	<code>\GTSnI/</code>		$v \not\text{---} e$
<code>\GTSnegatedIncidenceRelation/</code>	<code>\GTSnIR/</code>		$v \not\text{---} e$
<code>\GTSoutIncidence/</code>	<code>\GTSoI/</code>		$v \text{ --- } e$
<code>\GTSoutIncidenceRelation/</code>	<code>\GTSoIR/</code>		$v \text{ --- } e$
<code>\GTSnegatedOutIncidence/</code>	<code>\GTSnOI/</code>		$v \not\text{---} e$
<code>\GTSnegatedOutIncidenceRelation/</code>	<code>\GTSnOIR/</code>		$v \not\text{---} e$
<code>\GTSinIncidence/</code>	<code>\GTSiI/</code>		$v \text{ --- } e$
<code>\GTSinIncidenceRelation/</code>	<code>\GTSiIR/</code>		$v \text{ --- } e$
<code>\GTSnegatedInIncidence/</code>	<code>\GTSnII/</code>		$v \not\text{---} e$
<code>\GTSnegatedInIncidenceRelation/</code>	<code>\GTSnIIR/</code>		$v \not\text{---} e$

Long name	Short name	Result	In context
\GTSadjacencyMonochrome/	\GTSaM/		u v
\GTSadjacencyMonochromeRelation/	\GTSaMR/		u v
\GTSunadjacencyMonochrome/	\GTSuM/		u v
\GTSunadjacencyMonochromeRelation/	\GTSuMR/		u v
\GTSdirectedAdjacencyUpMonochrome/	\GTSdAUM/		u v
\GTSdirectedAdjacencyUpMonochromeRelation/	\GTSdAUMR/		u v
\GTSnegatedDirectedAdjacencyUpMonochrome/	\GTSnDAUM/		u v
\GTSnegatedDirectedAdjacencyUpMonochromeRelation/	\GTSnDAUMR/		u v
\GTSdirectedAdjacencyDownMonochrome/	\GTSdADM/		u v
\GTSdirectedAdjacencyDownMonochromeRelation/	\GTSdADMR/		u v
\GTSnegatedDirectedAdjacencyDownMonochrome/	\GTSnDADM/		u v
\GTSnegatedDirectedAdjacencyDownMonochromeRelation/	\GTSnDADMR/		u v
\GTSincidenceMonochrome/	\GTSiM/		v e
\GTSincidenceMonochromeRelation/	\GTSiMR/		v e
\GTSnegatedIncidenceMonochrome/	\GTSnIM/		v e
\GTSnegatedIncidenceMonochromeRelation/	\GTSnIMR/		v e
\GTSoutIncidenceMonochrome/	\GTSoIM/		v e
\GTSoutIncidenceMonochromeRelation/	\GTSoIMR/		v e
\GTSnegatedOutIncidenceMonochrome/	\GTSnOIM/		v e
\GTSnegatedOutIncidenceMonochromeRelation/	\GTSnOIMR/		v e
\GTSinIncidenceMonochrome/	\GTSiIM/		v e
\GTSinIncidenceMonochromeRelation/	\GTSiIMR/		v e
\GTSnegatedInIncidenceMonochrome/	\GTSnIIM/		v e
\GTSnegatedInIncidenceMonochromeRelation/	\GTSnIIMR/		v e
\GTSsetMainColor{blue}			
Long name	Short name	Result	In context
\GTSadjacency/	\GTSa/		u v
\GTSadjacencyRelation/	\GTSaR/		u v
\GTSunadjacency/	\GTSu/		u v
\GTSunadjacencyRelation/	\GTSuR/		u v
\GTSdirectedAdjacencyUp/	\GTSdAU/		u v
\GTSdirectedAdjacencyUpRelation/	\GTSdAUR/		u v
\GTSnegatedDirectedAdjacencyUp/	\GTSnDAU/		u v
\GTSnegatedDirectedAdjacencyUpRelation/	\GTSnDAUR/		u v
\GTSdirectedAdjacencyDown/	\GTSdAD/		u v
\GTSdirectedAdjacencyDownRelation/	\GTSdADR/		u v
\GTSnegatedDirectedAdjacencyDown/	\GTSnDAD/		u v
\GTSnegatedDirectedAdjacencyDownRelation/	\GTSnDADR/		u v
\GTSincidence/	\GTSi/		v e
\GTSincidenceRelation/	\GTSiR/		v e
\GTSnegatedIncidence/	\GTSnI/		v e
\GTSnegatedIncidenceRelation/	\GTSnIR/		v e
\GTSoutIncidence/	\GTSoI/		v e
\GTSoutIncidenceRelation/	\GTSoIR/		v e
\GTSnegatedOutIncidence/	\GTSnOI/		v e
\GTSnegatedOutIncidenceRelation/	\GTSnOIR/		v e
\GTSinIncidence/	\GTSiI/		v e
\GTSinIncidenceRelation/	\GTSiIR/		v e
\GTSnegatedInIncidence/	\GTSnII/		v e
\GTSnegatedInIncidenceRelation/	\GTSnIIR/		v e

Long name	Short name	Result	In context
<code>\GTSMetaNot/</code>	<code>\GTSMN/</code>	$\mathbb{M}$	$\mathbb{M}$
<code>\GTSMetaAnd/</code>	<code>\GTSMa/</code>	$\mathbb{A}$	$\mathbb{A}$
<code>\GTSMetaOr/</code>	<code>\GTSMO/</code>	$\mathbb{V}$	$\mathbb{V}$

Meta-logic can be used for compound adjacency types, etc.

Implicit meta-and via concatenation, no space except around whole relations compositions, no parentheses via higher priority to meta-and, brackets when all possible adjacencies are specified between two vertices:

Tournament adjacency:

$\forall u, v, u \mathbb{M} \mathbb{V} v$.

Tournament adjacency with maybe some colored edge also, who knows?:

$\forall u, v, u \mathbb{M} \mathbb{V} v$.

Directed graph:

$\forall u, v, u \mathbb{M} \mathbb{V} \mathbb{M} \mathbb{V} v$.

Oriented graph:

$\forall u, v, u \mathbb{M} \mathbb{V} \mathbb{M} \mathbb{V} v$.

Tournament adjacency:

$\mathbb{M} \mathbb{V}$ is obtained with `\mathrel{\{\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU\}}`.

Tournament adjacency with maybe some colored edge also, who knows?:

$\mathbb{M} \mathbb{V}$ is obtained with `\mathrel{\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU}`.

Directed graph:

$\mathbb{M} \mathbb{V} \mathbb{M} \mathbb{V}$ is obtained with

`\mathrel{\{\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU\}}`.

Oriented graph:

$\mathbb{M} \mathbb{V} \mathbb{M} \mathbb{V}$ is obtained with

`\mathrel{\{\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU\GTSMO\GTSDAD\GTSDAU\}}`.

Prefix notation:

$\exists u, v, u \mathbb{M} \mathbb{V} v \Leftrightarrow \exists u, v, u \mathbb{M} \mathbb{V} v$.

$\exists v, e, v \mathbb{M} \mathbb{V} e \Leftrightarrow \exists v, e, v \mathbb{M} \mathbb{V} e$.

$\mathbb{M} \mathbb{V}$ is obtained with

`\mathrel{\{\GTSMO\GTSxa[mC=red,d]\GTSxa[mC=green,d]\GTSxa[mC=blue,u]\}}`.

$\mathbb{M} \mathbb{V}$ is obtained with

`\mathrel{\{\GTSMO\GTSxi[mC=red,i]\GTSxi[mC=green,i]\GTSxi[mC=blue,o]\}}`.

Apart from these symbol macros, versatile macros to call them all are available with options: `\GTSxa[]`, `\GTSxadj[]`, or `\GTSxadjacency[]` for adjacency symbols, `\GTSxi[]`, `\GTSxinc[]`, or `\GTSxincidence[]` for incidence symbols, `\GTSxml[]`, or `\GTSxmetallogic[]` for meta-logic symbols, `\GTsx[]{}` for all symbols
 $(\backslash\text{GTsx}[\text{a}] = \backslash\text{GTSxa}[], \backslash\text{GTsx}[\text{i}] = \backslash\text{GTSxi}[], \backslash\text{GTsx}[\text{m}] = \backslash\text{GTSxml}[])$.
See Detailed usage section for full syntax of these macros.