

## Keyboard and Latex Representations of Special Symbols for CompSci 513 & 613

Symbol	Keyboard	LaTeX	Uses in CMPSCI 250
$\wedge$	<code>/\</code>	<code>\land</code>	logical and
$\vee$	<code>\ </code>	<code>\lor</code>	logical or
$\neg$	<code>-</code>	<code>\lnot</code>	logical not
$\rightarrow$	<code>-&gt;</code>	<code>\rightarrow</code>	implies in a logical formula
$\leftrightarrow$	<code>&lt;-&gt;</code>	<code>\leftrightarrow</code>	iff in a logical formula
$\oplus$	<code>oplus</code>	<code>\oplus</code>	exclusive or; sum mod 2
$\forall$	<code>A</code>	<code>\forall</code>	for all: the universal quantifier
$\exists$	<code>E</code>	<code>\exists</code>	there exists: the existential quantifier
$\exists!$	<code>E!</code>	<code>\exists !</code>	there exists a unique
$\equiv$	<code>equiv</code>	<code>\equiv</code>	equivalent meta symbol, $a \equiv b$ : $a$ and $b$ mean the same in all appropriate worlds $\mathcal{A}$ , $\mathcal{A}(a) = \mathcal{A}(b)$
$\models$	<code> =</code>	<code>\models</code>	$\models \alpha$ means “ $\alpha$ is valid, i.e., true in all appropriate structures” $\mathcal{A} \models \alpha$ means “ $\mathcal{A}$ satisfies $\alpha$ ”
$\vdash$	<code> -</code>	<code>\vdash</code>	$\vdash \alpha$ means “ $\alpha$ is a theorem of logic” $\Gamma \vdash \alpha$ means “ $\alpha$ is proved from assumptions $\Gamma$ ”
$\emptyset$	<code>emptyset</code>	<code>\emptyset</code>	the empty set
$\in$	<code>in</code>	<code>\in</code>	is an element of
$\subseteq$	<code>subsetq</code>	<code>\subseteq</code>	is a subset of of
$\wp$	<code>P</code>	<code>\wp</code>	$\wp(S)$ is the power set of $S$
$\alpha$	<code>alpha</code>	<code>\alpha</code>	Greek letter alpha, a logical formula
$\beta$	<code>beta</code>	<code>\beta</code>	Greek letter beta, a logical formula
$\gamma$	<code>gamma</code>	<code>\gamma</code>	Greek letter gamma, a logical formula
$\Gamma$	<code>Gamma</code>	<code>\Gamma</code>	Greek letter capital Gamma, a set of formulas
$\delta$	<code>delta</code>	<code>\delta</code>	Greek letter delta, a logical formula
$\chi$	<code>chi</code>	<code>\chi</code>	Greek letter chi, a logical formula
$\nu$	<code>nu</code>	<code>\nu</code>	Greek letter nu, a logical formula
$\varphi$	<code>phi</code>	<code>\varphi</code>	Greek letter phi, a logical formula
$\psi$	<code>psi</code>	<code>\psi</code>	Greek letter psi, a logical formula
$\rho$	<code>rho</code>	<code>\rho</code>	Greek letter rho, a logical formula
$\sigma$	<code>sigma</code>	<code>\sigma</code>	Greek letter sigma, a logical formula
$\Sigma$	<code>Sigma</code>	<code>\Sigma</code>	Greek letter capital Sigma, a vocabulary
$\hookrightarrow$	<code>C-&gt;</code>	<code>\hookrightarrow</code>	is an abbreviation for
$\perp$	<code>F</code>	<code>\perp</code>	bottom: a contradiction
$\top$	<code>T</code>	<code>\top</code>	top: a valid statement
$\neq$	<code>!=</code>	<code>\neq</code>	$a \neq b \leftrightarrow \neg(a = b)$