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$\asymp$ \asymp	$\gg$ \gg	$\bowtie$ \bowtie
$\cong$ \cong	$\ll$ \ll	$\propto$ \propto
$\dashv$ \dashv	$\models$ \models	$\approx$ \approx
$\vdash$ \vdash	$\neq$ \ne	$\sim$ \sim
$\perp$ \perp	$\neq$ \neq	$\simeq$ \simeq
$\mid$ \mid	$\notin$ \notin	$\frown$ \frown
$\parallel$ \parallel	$\in$ \in	$\smile$ \smile
$\doteq$ \doteq	$\ni$ \ni	$\subset$ \subset
$\equiv$ \equiv	$\ni$ \owns	$\subseteq$ \subseteq
$\geq$ \ge	$\prec$ \prec	$\supset$ \supset
$\geq$ \geq	$\preceq$ \preceq	$\supseteq$ \supseteq
$\leq$ \le	$\succ$ \succ	$\sqsubseteq$ \sqsubseteq
$\leq$ \leq	$\succeq$ \succeq	$\sqsupseteq$ \sqsupseteq

These commands produce the symbols for various relations. Relations are one of TEX's classes of math symbols. TEX puts different amounts of space around different classes of math symbols. When TEX needs to break a line of text within a math formula, it will consider placing the break after a relation—but only if the relation is at the outermost level of the formula, i.e., not enclosed in a group.

In addition to the commands listed here, TEX treats '=' and the "arrow" commands (p. '`arrows`') as relations.

Certain relations have more than one command that you can use to produce them:

- '$\geq$' (`\ge` and `\geq`).
- '$\leq$' (`\le` and `\leq`).
- '$\neq$' (`\ne`, `\neq`, and `\not=`).
- '$\ni$' (`\ni` and `\owns`).

You can produce negated relations by prefixing them with `\not`, as follows:

$\not\asymp$ \not\asymp	$\not\leq$ \not\leq	$\not\simeq$ \not\simeq
$\not\cong$ \not\cong	$\not\prec$ \not\prec	$\not\subset$ \not\subset
$\not\equiv$ \not\equiv	$\not\preceq$ \not\preceq	$\not\subseteq$ \not\subseteq
$\neq$ \not=	$\not\succ$ \not\succ	$\not\supset$ \not\supset
$\not\geq$ \not\ge	$\not\succeq$ \not\succeq	$\not\supseteq$ \not\supseteq
$\not\geq$ \not\geq	$\not\approx$ \not\approx	$\not\sqsubseteq$ \not\sqsubseteq
$\not\leq$ \not\le	$\not\sim$ \not\sim	$\not\sqsupseteq$ \not\sqsupseteq

Example:

```
We can show that $AB \perp AC$, and that
$\triangle ABF \not\sim \triangle ACF$.
```

produces:

We can show that $AB \perp AC$, and that $\triangle ABF \not\sim \triangle ACF$.