# T<sub>E</sub>X SYMBOLS

## Large Operators

| | | |
|---|---|---|
| $\sum$ \sum | $\bigcap$ \bigcap | $\bigodot$ \bigodot |
| $\prod$ \prod | $\bigcup$ \bigcup | $\bigotimes$ \bigotimes |
| $\coprod$ \coprod | $\bigsqcup$ \bigsqcup | $\bigoplus$ \bigoplus |
| $\int$ \int | $\bigvee$ \bigvee | $\biguplus$ \biguplus |
| $\oint$ \oint | $\bigwedge$ \bigwedge | |

## Binary Relations

| | | |
|---|---|---|
| $\pm$ \pm | $\cap$ \cap | $\vee$ \vee, \lor |
| $\mp$ \mp | $\cup$ \cup | $\wedge$ \wedge, \land |
| $\setminus$ \setminus | $\uplus$ \uplus | $\oplus$ \oplus |
| $\cdot$ \cdot | $\sqcap$ \sqcap | $\ominus$ \ominus |
| $\times$ \times | $\sqcup$ \sqcup | $\otimes$ \otimes |
| $\ast$ \ast | $\triangleleft$ \triangleleft | $\oslash$ \oslash |
| $\star$ \star | $\triangleright$ \triangleright | $\odot$ \odot |
| $\diamond$ \diamond | $\wr$ \wr | $\dagger$ \dagger |
| $\circ$ \circ | $\bigcirc$ \bigcirc | $\ddagger$ \ddagger |
| $\bullet$ \bullet | $\div$ \div | $\amalg$ \amalg |
| $\bigtriangleup$ \bigtriangleup | $\bigtriangledown$ \bigtriangledown | |

## Relations

| | | |
|---|---|---|
| $\leq$ \leq, \le | $\geq$ \geq, \ge | $\sim$ \sim |
| $\prec$ \prec | $\succ$ \succ | $\simeq$ \simeq |
| $\preceq$ \preceq | $\succeq$ \succeq | $\asymp$ \asymp |
| $\ll$ \ll | $\gg$ \gg | $\approx$ \approx |
| $\subset$ \subset | $\supset$ \supset | $\cong$ \cong |
| $\subseteq$ \subseteq | $\supseteq$ \supseteq | $\propto$ \propto |
| $\sqsubseteq$ \sqsubseteq | $\neq$ \neq | $\models$ \models |
| $\in$ \in | $\ni$ \ni, \owns | $\doteq$ \doteq |
| $\vdash$ \vdash | $\dashv$ \dashv | $\perp$ \perp |
| $\equiv$ \equiv | $\dashv$ \dashv | $\bowtie$ \bowtie |

**Remark** \not negates most relations.

## Arrows

| | | |
|---|---|---|
| $\leftarrow$ \leftarrow, \gets | $\longleftarrow$ \longleftarrow | $\uparrow$ \uparrow |
| $\Leftarrow$ \Leftarrow | $\Longleftarrow$ \Longleftarrow | $\Uparrow$ \Uparrow |
| $\rightarrow$ \rightarrow, \to | $\longrightarrow$ \longrightarrow | $\downarrow$ \downarrow |
| $\Rightarrow$ \Rightarrow | $\Longrightarrow$ \Longrightarrow | $\Downarrow$ \Downarrow |
| $\leftrightarrow$ \leftrightarrow | $\longleftrightarrow$ \longleftrightarrow | $\updownarrow$ \updownarrow |
| $\Leftrightarrow$ \Leftrightarrow | $\Longleftrightarrow$ \Longleftrightarrow, \iff | $\Updownarrow$ \Updownarrow |
| $\mapsto$ \mapsto | $\longmapsto$ \longmapsto | $\nearrow$ \nearrow |
| $\hookleftarrow$ \hookleftarrow | $\hookrightarrow$ \hookrightarrow | $\searrow$ \searrow |
| $\leftharpoonup$ \leftharpoonup | $\rightharpoonup$ \rightharpoonup | $\swarrow$ \swarro |
| $\leftharpoondown$ \leftharpoondown | $\rightharpoondown$ \rightharpoondown | $\nwarrow$ \nwarrow |
| $\rightleftharpoons$ \rightleftharpoons | | |

## Openings and Closings

| | | | | |
|---|---|---|---|---|
| $[$ \lbrack | $\{$ \lbrace | $\lfloor$ \lfloor | $\langle$ \langle | $\lceil$ \lceil |
| $]$ \rbrack | $\}$ \rbrace | $\rfloor$ \rfloor | $\rangle$ \rangle | $\rceil$ \rceil |

## Miscellaneous Symbols

| | | |
|---|---|---|
| $\aleph$ \aleph | $\hbar$ \hbar | $\imath$ \imath |
| $\jmath$ \jmath | $\ell$ \ell | $\wp$ \wp |
| $\Re$ \Re | $\Im$ \Im | $\partial$ \partial |
| $\infty$ \infty | $\prime$ \prime | $\emptyset$ \emptyset |
| $\nabla$ \nabla | $\surd$ \surd | $\top$ \top |
| $\bot$ \bot | $|$ \|, \vert | $\|$ \\\|, \Vert |
| $\angle$ \angle | $\triangle$ \triangle | $\backslash$ \backslash |
| $\forall$ \forall | $\exists$ \exists | $\neg$ \neg, \lnot |
| $\flat$ \flat | $\natural$ \natural | $\sharp$ \sharp |
| $\clubsuit$ \clubsuit | $\diamondsuit$ \diamondsuit | $\heartsuit$ \heartsuit |
| $\spadesuit$ \spadesuit | $\S$ \S | $\P$ \P |

## Math Accents

| | | |
|---|---|---|
| $\hat a$ \hat a | $\grave a$ \grave a | $\bar a$ \bar a |
| $\check a$ \check a | $\dot a$ \dot a | $\vec a$ \vec a |
| $\tilde a$ \tilde a | $\ddot a$ \ddot a | $\widehat{ab}$ \widehatab |
| $\acute a$ \acute a | $\breve a$ \breve a | $\widetilde{ab}$ \widetildeab |