

Basic commands - these commands involve holding down the control key, pressing a letter, and then releasing the control key.

ctrl+m: toggles "math" mode
ctrl+f: inserts a fraction \rightarrow
ctrl+g: initiates "Greek" mode - the next letter you type will be a Greek letter.

e.g. ctrl+g (release) a $\rightarrow \alpha$
ctrl+9: inserts parentheses $\rightarrow ()$
ctrl+[: inserts brackets $\rightarrow []$
ctrl+shift+[: inserts braces $\rightarrow \{\}$
ctrl+d: inserts a nested display - useful for organizing equations \rightarrow

$asdf$

ctrl+h: inserts superscript $\rightarrow a^a$
ctrl+l: inserts subscript $\rightarrow a_a$
ctrl+i: inserts an integral sign $\rightarrow \int$
ctrl+r: inserts a radical sign $\rightarrow \sqrt{\quad}$

In addition, there are many commands that are of the form ctrl+s (release) (letter):

ctrl+s (release) a: \angle (angle sign)
ctrl+s (release) b: \bullet (placeholder)
ctrl+s (release) c: \subset (inclusion sign)
ctrl+s (release) d: ∂ (partial derivative)
ctrl+s (release) e: \in (element sign)
ctrl+s (release) f: $\frac{a}{b}$ (fraction)
ctrl+s (release) h: a^a (superscript)
ctrl+s (release) i: \int (integral)
ctrl+s (release) l: a_a (subscript)
ctrl+s (release) m: $\begin{matrix} a & b & c \\ d & e & f \\ g & h & i \end{matrix}$ (matrix of default size)
ctrl+s (release) n: ∇ (gradient operator)
ctrl+s (release) o: \emptyset (empty set)
ctrl+s (release) p: \prod (product sign)
ctrl+s (release) r: $\sqrt{\quad}$ (radical sign)
ctrl+s (release) s: \sum (summation sign)
ctrl+s (release) t: \otimes (tensor product sign)
ctrl+s (release) v: \vee ("or" sign)
ctrl+s (release) w: \approx ("approximately equal" sign)
ctrl+s (release) x: \times (cross sign)
ctrl+s (release) z: \exists (there exists)

ctrl+s (release) A: \forall (for all)
 ctrl+s (release) C: \cdot (product sign)
 ctrl+s (release) D: \diamond (diamond)
 ctrl+s (release) E: \notin (not an element of)
 ctrl+s (release) F: $\frac{a}{b}$ (fraction)
 ctrl+s (release) H: a^b (superscript)
 ctrl+s (release) I: ∞ (infinity)
 ctrl+s (release) L: a_b (subscript)
 ctrl+s (release) M: $\begin{matrix} a & b \\ c & d \end{matrix}$ (2×2 matrix)
 ctrl+s (release) N: \neg (not)
 ctrl+s (release) P: \wp (script P)
 ctrl+s (release) R: $\sqrt{\quad}$ (radical)
 ctrl+s (release) S: \oplus (direct sum sign)
 ctrl+s (release) T: \otimes (tensor product sign)
 ctrl+s (release) V: \wedge (and)
 ctrl+s (release) W: \aleph (aleph naught)
 ctrl+s (release) X: \div (division sign)

ctrl+s (release) -: \equiv (defined as)
 ctrl+s (release) =: \neq (not equal to)
 ctrl+s (release) shift+ -: \cong (congruent to)
 ctrl+s (release) shift+ + -: \pm (plus or minus)
 ctrl+s (release) 1: \rightarrow (right arrow)
 ctrl+s (release) 2: \uparrow (up arrow)
 ctrl+s (release) 3: \leftarrow (left arrow)
 ctrl+s (release) 4: \downarrow (down arrow)
 ctrl+s (release) 5: \supseteq (reverse weak inclusion)
 ctrl+s (release) 6: \cap (intersection)
 ctrl+s (release) 7: \subseteq (weak inclusion)
 ctrl+s (release) 8: \cup (union)
 ctrl+s (release) shift+1: \Rightarrow (right double arrow)
 ctrl+s (release) shift+2: \Uparrow (up double arrow)
 ctrl+s (release) shift+3: \Leftarrow (left double arrow)
 ctrl+s (release) shift+4: \Downarrow (down double arrow)
 ctrl+s (release) shift+5: \supset (reverse inclusion)
 ctrl+s (release) shift+7: \subset (inclusion)

In addition, there are "tex" commands that work by holding down ctrl while typing a short phrase and then releasing ctrl. There are far too many to list here, but I will list as many as I can remember:

ctrl+ni: \ni (such that) or (reverse inclusion)
 ctrl+cup: \cup (union)
 ctrl+bigcup: \bigcup (big union sign - useful for indexed unions)
 ctrl+cap: \cap (intersection)
 ctrl+bigcap: \bigcap (big intersection sign - useful for indexed intersections)

ctrl+sim: \sim (indifferent)
ctrl+nexists: \nexists (there does not exist)
ctrl+ell: ℓ (script l)
ctrl+bot: \perp (perpendicular)