

The "shows" operator represents sequent judgment (turnstile).

In sequent calculus, "Gamma shows Delta" means "from context Gamma, we can derive Delta".

Simple sequent judgment:

$\Gamma \vdash \Delta$

More concrete example with specific propositions:

$(P \wedge Q) \vdash P$

Sequent with multiple context items (using sets):

$\{P, P \Rightarrow Q\} \vdash Q$

We can use shows in inference rules to represent natural deduction:

$$\frac{\begin{array}{l} \Gamma \vdash P \\ \Gamma \vdash (P \Rightarrow Q) \end{array}}{\Gamma \vdash Q} \quad \text{modus ponens} \in \text{sequent form}$$

Combining shows with inference rules for natural deduction style:

$$\frac{\begin{array}{l} \Gamma \vdash A \\ \Gamma \vdash B \end{array}}{\Gamma \vdash (A \wedge B)} \quad \text{conjunction introduction}$$

The shows operator renders as the turnstile symbol in LaTeX.