Für alle $\Gamma, \Gamma' \subseteq_e \mathsf{FO}[\sigma]$, alle $\varphi, \psi, \chi \in \mathsf{FO}[\sigma]$, alle $t, u \in \mathsf{T}_\sigma$ und alle $x, y \in \mathsf{VAR}$ betrachten wir die folgenden Sequenzenregeln:

- *Voraussetzungsregel* (V), *Erweiterungsregel* (E):

$$\frac{}{\Gamma, \varphi \vdash \varphi} \qquad\qquad \frac{\Gamma \vdash \varphi}{\Gamma' \vdash \varphi} \quad \text{falls } \Gamma \subseteq \Gamma'$$

- *Fallunterscheidungsregel* (FU), *Widerspruchsregel* (W):

$$\frac{\begin{array}{l}\Gamma, \psi \vdash \varphi \\ \Gamma, \neg\psi \vdash \varphi\end{array}}{\Gamma \vdash \varphi} \qquad\qquad \frac{\begin{array}{l}\Gamma \vdash \psi \\ \Gamma \vdash \neg\psi\end{array}}{\Gamma \vdash \varphi} \quad (\text{für alle } \varphi \in \mathsf{FO}[\sigma])$$

- $\wedge$-*Einführung* ($\wedge$S), ($\wedge$A$_1$), ($\wedge$A$_2$):

$$\frac{\begin{array}{l}\Gamma \vdash \varphi \\ \Gamma \vdash \psi\end{array}}{\Gamma \vdash (\varphi \wedge \psi)} \qquad \frac{\Gamma, \varphi \vdash \chi}{\Gamma, (\varphi \wedge \psi) \vdash \chi} \qquad \frac{\Gamma, \psi \vdash \chi}{\Gamma, (\varphi \wedge \psi) \vdash \chi}$$

- $\vee$-*Einführung* ($\vee$S$_1$), ($\vee$S$_2$), ($\vee$A):

$$\frac{\Gamma \vdash \varphi}{\Gamma \vdash (\varphi \vee \psi)} \qquad \frac{\Gamma \vdash \psi}{\Gamma \vdash (\varphi \vee \psi)} \qquad \frac{\begin{array}{l}\Gamma, \varphi \vdash \chi \\ \Gamma, \psi \vdash \chi\end{array}}{\Gamma, (\varphi \vee \psi) \vdash \chi}$$

- $\forall$-*Einführung* ($\forall$A), ($\forall$S):

$$\frac{\Gamma, \varphi\frac{t}{x} \vdash \psi}{\Gamma, \forall x\varphi \vdash \psi} \qquad\qquad \frac{\Gamma \vdash \varphi\frac{y}{x}}{\Gamma \vdash \forall x\varphi} \quad \text{falls } y \notin \text{frei}(\Gamma, \forall x\varphi)$$

- $\exists$-*Einführung* ($\exists$A), ($\exists$S):

$$\frac{\Gamma, \varphi\frac{y}{x} \vdash \psi}{\Gamma, \exists x\varphi \vdash \psi} \quad \text{falls } y \notin \text{frei}(\Gamma, \exists x\varphi, \psi) \qquad\qquad \frac{\Gamma \vdash \varphi\frac{t}{x}}{\Gamma \vdash \exists x\varphi}$$

- *Reflexivität der Gleichheit* (G) *und Substitutionsregel* (S)*:*

$$\frac{}{\Gamma \vdash t{=}t} \qquad\qquad \frac{\Gamma \vdash \varphi\frac{t}{x}}{\Gamma, t{=}u \vdash \varphi\frac{u}{x}}$$