

axd.1 Axioms and Rules for Quantifiers

fol:axd:qua:
sec

Definition axd.1 (Axioms for quantifiers). The *axioms* governing quantifiers are all instances of the following:

fol:axd:qua:
ax:q1
fol:axd:qua:
ax:q2

$$\forall x \psi \rightarrow \psi(t), \quad (1)$$

$$\psi(t) \rightarrow \exists x \psi. \quad (2)$$

for any closed term t .

Definition axd.2 (Rules for quantifiers).

If $\psi \rightarrow \varphi(a)$ already occurs in the **derivation** and a does not occur in Γ or ψ , then $\psi \rightarrow \forall x \varphi(x)$ is a correct inference step.

If $\varphi(a) \rightarrow \psi$ already occurs in the **derivation** and a does not occur in Γ or ψ , then $\exists x \varphi(x) \rightarrow \psi$ is a correct inference step.

We'll abbreviate either of these by "QR."

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Bibliography