

antecedent-surjection^{11,40}

$$Q \leftarrow\leftarrow f \dashv\vdash P \equiv_{\text{def}} Q \leftarrow \dashv\vdash P \ \& \ (\forall e:\{e:\mathbf{E} \mid Q(e)\} . \exists e':\{e:\mathbf{E} \mid P(e)\} . (f(e') = e))$$

clarification:

$$\begin{aligned} & \text{antecedent-surjection}(es;P;Q;f) \\ \equiv_{\text{def}} & \text{antecedent-function}(es;P;Q;f) \\ & \ \& \ (\forall e:\{e:\text{es-E}(es) \mid Q(e)\} . \exists e':\{e:\text{es-E}(es) \mid P(e)\} . (f(e') = e \in \text{es-E}(es))) \end{aligned}$$