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**Lemma 1**  $[p:term]$   $\mathbf{T} p$ .

**Proof.**  $\mathbf{T} p$  by completion.  $\square$

**Lemma 2**  $[p:succes]$   $\mathbf{S} p$ .

**Proof.**  $\mathbf{S} p$  by completion.  $\square$

**Lemma 3**  $[q:succes]$   $\mathbf{S} q$ .

**Proof.**  $\mathbf{S} q$  by sld.  $\square$

**Lemma 4**  $[p:faux_implique_tout]$   $\mathbf{F} p \rightarrow a = b$ .

**Proof.**

Assumption<sub>0</sub>:  $\mathbf{F} p$ .  $\mathbf{S} p$  by completion.  $\perp$ .

Thus<sub>0</sub>:  $\mathbf{F} p \rightarrow a = b$ .  $\square$

**Lemma 5**  $[r:succes]$   $\mathbf{S} r$ .

**Proof.**  $\mathbf{S} p$  by sld.  $\square$

**Lemma 6**  $[r:term]$   $\mathbf{T} r$ .

**Proof.**  $\mathbf{T} p$  by completion.  $\mathbf{T} q$  by completion.  $\mathbf{T} p \wedge \mathbf{T} q$ .  $\square$

**Lemma 7**  $[s:succes]$   $\mathbf{S} s$ .

**Proof.**  $\mathbf{S} p$  by sld.  $\mathbf{S} q$  by completion.  $\square$

**Lemma 8**  $[s:term]$   $\mathbf{T} s$ .

**Proof.**  $\mathbf{T} p$  by completion.  $\mathbf{T} q$  by completion.  $\mathbf{T} s$  by completion.  $\square$

**Lemma 9**  $[t:succes]$   $\mathbf{S} t$ .

**Proof.**  $\mathbf{S} t$  by sld.  $\square$

**Lemma 10**  $[u:total]$   $\mathbf{T} u \rightarrow \mathbf{S} u \vee \mathbf{F} u$ .

**Proof.**

Assumption<sub>0</sub>:  $\mathbf{T} u$ .

Thus<sub>0</sub>:  $\mathbf{T} u \rightarrow \mathbf{S} u \vee \mathbf{F} u$ .  $\square$

**Lemma 11**  $[v:succes]$   $\mathbf{S} v$ .

**Proof.**  $\mathbf{S} p$  by sld.  $\mathbf{S} q$  by completion.  $\mathbf{S} s$  by sld.  $\mathbf{S} v$  by sld.  $\square$

**Lemma 12**  $[x:echec]$   $\mathbf{F} x$ .

**Proof.**  $\mathbf{F} x$  by completion.  $\square$

**Lemma 13**  $[w:term]$   $\mathbf{T} w$ .

**Proof.**  $\mathbf{T} x$  by completion.  $\mathbf{F} x$  by completion.  $\mathbf{T}(x \wedge u)$ .  $\square$