

Inference at * 2 2

of proof for Lemma member-zip:

1. A : Type
 2. B : Type
 3. A List
 4. u : A
 5. v : A List
 6. $\forall ys:(B \text{ List}), x:A, y:B. (\langle x, y \rangle \in \text{zip}(v;ys)) \Rightarrow \{(x \in v) \ \& \ (y \in ys)\}$
 7. B List
 8. u_1 : B
 9. v_1 : B List
 10. $\forall x:A, y:B. (\langle x, y \rangle \in \text{zip}([u / v];v_1)) \Rightarrow \{(x \in [u / v]) \ \& \ (y \in v_1)\}$
- $\vdash \forall x:A, y:B. (\langle x, y \rangle \in \text{zip}([u / v];[u_1 / v_1])) \Rightarrow \{(x \in [u / v]) \ \& \ (y \in [u_1 / v_1])\}$
by Reduce 0 THEN Auto THEN RWO "cons_member" (-1) THENA Auto
THEN D (-1)

1:

11. x : A
 12. y : B
 13. $\langle x, y \rangle = \langle u, u_1 \rangle$
- $\vdash \{(x \in [u / v]) \ \& \ (y \in [u_1 / v_1])\}$

2:

11. x : A
 12. y : B
 13. $\langle x, y \rangle \in \text{zip}(v;v_1)$
- $\vdash \{(x \in [u / v]) \ \& \ (y \in [u_1 / v_1])\}$
- .