

thm_2Emarker_2Emove_left_conj
(TMHrN21usqzQsEN8PDtKLaCCwz9x9k3Snnw)

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Definition 1 We define `c_2Emin_2E_3D` to be $\lambda A.\lambda x \in A.\lambda y \in A.inj_o (x = y)$ of type $\iota \Rightarrow \iota$.

Definition 2 We define `c_2Ebool_2ET` to be $(ap (ap (c_2Emin_2E_3D (2^2)) (\lambda V0x \in 2.V0x)) (\lambda V1x \in 2.V1x))$

Definition 3 We define `c_2Ebool_2E_21` to be $\lambda A_{.27a} : \iota.(\lambda V0P \in (2^{A_{.27a}}).(ap (ap (c_2Emin_2E_3D (2^{A_{.27a}}))$

Definition 4 We define `c_2Ebool_2EF` to be $(ap (c_2Ebool_2E_21 2) (\lambda V0t \in 2.V0t))$.

Definition 5 We define `c_2Emin_2E_3D_3D_3E` to be $\lambda P \in 2.\lambda Q \in 2.inj_o (p P \Rightarrow p Q)$ of type ι .

Definition 6 We define `c_2Ebool_2E_2F_5C` to be $(\lambda V0t1 \in 2.(\lambda V1t2 \in 2.(ap (c_2Ebool_2E_21 2) (\lambda V2t \in 2.V2t))$

Definition 7 We define `c_2Emarker_2Estmarker` to be $\lambda A_{.27a} : \iota.\lambda V0x \in A_{.27a}.V0x$.

Assume the following.

$$(\forall V0t1 \in 2.(\forall V1t2 \in 2.(((p V0t1) \wedge (p V1t2)) \Leftrightarrow ((p V1t2) \wedge (p V0t1)))))) \quad (1)$$

Assume the following.

$$(\forall V0t1 \in 2.(\forall V1t2 \in 2.(\forall V2t3 \in 2.(((p V0t1) \wedge ((p V1t2) \wedge (p V2t3))) \Leftrightarrow (((p V0t1) \wedge (p V1t2)) \wedge (p V2t3)))))) \quad (2)$$

Assume the following.

$$(\forall V0t \in 2.(((True \wedge (p V0t)) \Leftrightarrow (p V0t)) \wedge (((p V0t) \wedge True) \Leftrightarrow (p V0t)) \wedge (((False \wedge (p V0t)) \Leftrightarrow False) \wedge (((p V0t) \wedge False) \Leftrightarrow False) \wedge (((p V0t) \wedge (p V0t)) \Leftrightarrow (p V0t)))))) \quad (3)$$

Assume the following.

$$\forall A_{.27a}.nonempty A_{.27a} \Rightarrow (\forall V0x \in A_{.27a}.((V0x = V0x) \Leftrightarrow True)) \quad (4)$$

Theorem 1

$$\begin{aligned} & (\forall V0p \in 2. (\forall V1q \in 2. (\forall V2m \in 2. (((p \ V0p) \wedge \\ (p \ (ap \ (c_2Emarker_2Estmarker \ 2) \ V2m))) \Leftrightarrow & ((p \ (ap \ (c_2Emarker_2Estmarker \\ 2) \ V2m)) \wedge (p \ V0p))) \wedge (((p \ (ap \ (c_2Emarker_2Estmarker \ 2) \ V2m)) \wedge \\ (p \ V0p)) \wedge (p \ V1q)) \Leftrightarrow & ((p \ (ap \ (c_2Emarker_2Estmarker \ 2) \ V2m)) \wedge ((\\ p \ V0p) \wedge (p \ V1q))) \wedge & ((p \ V0p) \wedge ((p \ (ap \ (c_2Emarker_2Estmarker \ 2) \\ V2m)) \wedge (p \ V1q))) \Leftrightarrow & ((p \ (ap \ (c_2Emarker_2Estmarker \ 2) \ V2m)) \wedge ((p \\ V0p) \wedge (p \ V1q)))))) \end{aligned}$$