

thm_2Emarker_2Emove__right__conj
(TMHQG79nQUSZEytqfYaoArxBrC5CkSspg5u)

October 26, 2020

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.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.((V0x = V0x) \Leftrightarrow True)) \quad (4)$$

Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.(\forall V1y \in A_27a.((V0x = V1y) \Leftrightarrow (V1y = V0x)))) \quad (5)$$

Theorem 1

$$\begin{aligned} & (\forall V_0 p \in 2. (\forall V_1 q \in 2. (\forall V_2 m \in 2. (((p (ap (c_2Emarker_2Estmarker \\ & 2) V_2 m)) \wedge (p V_0 p)) \Leftrightarrow ((p V_0 p) \wedge (p (ap (c_2Emarker_2Estmarker 2) \\ & V_2 m)))) \wedge (((p V_0 p) \wedge (p V_1 q) \wedge (p (ap (c_2Emarker_2Estmarker 2) \\ & V_2 m)))) \Leftrightarrow ((p V_0 p) \wedge (p V_1 q) \wedge (p (ap (c_2Emarker_2Estmarker 2) \\ & V_2 m)))) \wedge (((p V_0 p) \wedge (p (ap (c_2Emarker_2Estmarker 2) V_2 m))) \wedge \\ & (p V_1 q)) \Leftrightarrow (((p V_0 p) \wedge (p V_1 q) \wedge (p (ap (c_2Emarker_2Estmarker 2) \\ & V_2 m))))))))) \end{aligned}$$