thm_2Emarker_2Emove__left__disj (TMLbB2G5EKWUREwXxMXpwZ1MF93o7qch5Hk)

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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 $(2^2))\ (\lambda V0x \in 2.V0x))\ (\lambda V1x \in 2.V$

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 $(2^{A\_27}$

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 $2)\ (\lambda V2t \in 2$

Definition 7 *We define* c_2Ebool_2E_5C_2F *to be* $(\lambda V0t1 \in 2.(\lambda V1t2 \in 2.(ap\ ($c_2Ebool_2E_21 $2)\ (\lambda V2t \in 2$

Definition 8 *We define* c_2Emarker_2Estmarker *to be* $\lambda A\_27a : \iota.\lambda V0x \in A\_27a.V0x$.

Assume the following.

$$(\forall V0t \in 2.(((True \wedge (p\ V0t)) \Leftrightarrow (p\ V0t)) \wedge ((((p\ V0t) \wedge True) \Leftrightarrow (p\ V0t)) \wedge (((False \wedge (p\ V0t)) \Leftrightarrow False) \wedge ((((p\ V0t) \wedge False) \Leftrightarrow False) \wedge (((p\ V0t) \wedge (p\ V0t)) \Leftrightarrow (p\ V0t))))))) \tag{1}$$

Assume the following.

$$\forall A\_27a.nonempty\ A\_27a \Rightarrow (\forall V0x \in A\_27a.((V0x = V0x) \Leftrightarrow True)) \tag{2}$$

Assume the following.

$$(\forall V0A \in 2.(\forall V1B \in 2.(\forall V2C \in 2.(((p\ V0A) \vee ((p\ V1B) \vee (p\ V2C))) \Leftrightarrow (((p\ V0A) \vee (p\ V1B)) \vee (p\ V2C)))))) \tag{3}$$

Assume the following.

$$(\forall V0A \in 2.(\forall V1B \in 2.(((p\ V0A) \vee (p\ V1B)) \Leftrightarrow ((p\ V1B) \vee (p\ V0A))))) \tag{4}$$

Theorem 1

$$(\forall V0p \in 2.(\forall V1q \in 2.(\forall V2m \in 2.((((p\ V0p)\vee (p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2)\ V2m)))\Leftrightarrow((p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2)\ V2m))\vee(p\ V0p)))\wedge(((((p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2)\ V2m))\vee (p\ V0p))\vee(p\ V1q))\Leftrightarrow((p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2)\ V2m))\vee((p\ V0p)\vee(p\ V1q))))\wedge(((p\ V0p)\vee((p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2) V2m))\vee(p\ V1q)))\Leftrightarrow((p\ (ap\ (\mathsf{c\_2Emarker\_2Estmarker}\ 2)\ V2m))\vee((p\ V0p)\vee(p\ V1q)))))))))$$