

thm_2Equotient_2ELAMBDA__REP__ABS__RSP (TMcN43ox24pxTgMbSNeFm49xsB4mhasWefH)

October 26, 2020

Definition 1 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 2 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 3 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 4 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 5 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 6 We define `c_2Equotient_2E_2D_2D_3E` to be $\lambda A_27a : \iota.\lambda A_27b : \iota.\lambda A_27c : \iota.\lambda A_27d : \iota.\lambda V0f$

Definition 7 We define `c_2Equotient_2E_3D_3D_3D_3E` to be $\lambda A_27a : \iota.\lambda A_27b : \iota.\lambda V0R1 \in ((2^{A_27a})^{A_27a})$

Theorem 1

$$\begin{aligned} & \forall A_27a.nonempty A_27a \Rightarrow \forall A_27b.nonempty A_27b \Rightarrow \forall A_27c. \\ & nonempty A_27c \Rightarrow \forall A_27d.nonempty A_27d \Rightarrow (\forall V0REL1 \in \\ & ((2^{A_27a})^{A_27a}).(\forall V1abs1 \in (A_27c^{A_27a}).(\forall V2rep1 \in \\ & (A_27a^{A_27c}).(\forall V3REL2 \in ((2^{A_27b})^{A_27b}).(\forall V4abs2 \in \\ & (A_27d^{A_27b}).(\forall V5rep2 \in (A_27b^{A_27d}).(\forall V6f1 \in (\\ & A_27b^{A_27a}).(\forall V7f2 \in (A_27b^{A_27a}).(((\forall V8r \in A_27a. \\ & (\forall V9r_27 \in A_27a.((p (ap (ap V0REL1 V8r) V9r_27)) \Rightarrow (p (ap (\\ & ap V0REL1 V8r) (ap V2rep1 (ap V1abs1 V9r_27)))))) \wedge (\forall V10r \in \\ & A_27b.(\forall V11r_27 \in A_27b.((p (ap (ap V3REL2 V10r) V11r_27)) \Rightarrow \\ & (p (ap (ap V3REL2 V10r) (ap V5rep2 (ap V4abs2 V11r_27)))))) \wedge (p \\ & (ap (ap (ap (ap (c_2Equotient_2E_3D_3D_3D_3E A_27a A_27b) V0REL1) \\ & V3REL2) V6f1) V7f2))) \Rightarrow (p (ap (ap (ap (ap (c_2Equotient_2E_3D_3D_3D_3E \\ & A_27a A_27b) V0REL1) V3REL2) V6f1) (ap (ap (ap (c_2Equotient_2E_2D_2D_3E \\ & A_27a A_27d A_27c A_27b) V1abs1) V5rep2) (ap (ap (ap (c_2Equotient_2E_2D_2D_3E \\ & A_27c A_27b A_27a A_27d) V2rep1) V4abs2) V7f2)))))))))) \end{aligned}$$