

thm_2Epred__set_2EPOW__INSERT (TMdYoR72ifENDKbspbEW8zy5cQ3ys3m4BqF)

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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 $c_2Ebool_2E_2T$ to be $(ap (ap (c_2Emin_2E_3D (2^2)) (\lambda V0x \in 2.V0x)) (\lambda V1x \in 2.V1x))$

Definition 3 We define $c_2Ebool_2E_2IN$ to be $\lambda A_27a : \iota.(\lambda V0x \in A_27a.(\lambda V1f \in (2^{A_27a}).(ap V1f V0x)))$

Definition 4 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 5 We define $c_2Ebool_2E_21$ to be $\lambda A_27a : \iota.(\lambda V0P \in (2^{A_27a}).(ap (ap (c_2Emin_2E_3D (2^{A_27a})) (\lambda V1t \in 2.V1t)) (\lambda V2t \in 2.V2t)))$

Definition 6 We define $c_2Ebool_2E_5C_2F$ to be $(\lambda V0t1 \in 2.(\lambda V1t2 \in 2.(ap (c_2Ebool_2E_21 2) (\lambda V2t \in 2.V2t))))$

Definition 7 We define $c_2Ebool_2E_2F_5C$ to be $(\lambda V0t1 \in 2.(\lambda V1t2 \in 2.(ap (c_2Ebool_2E_21 2) (\lambda V2t \in 2.V2t))))$

Let $ty_2Epair_2Eprod : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A0.nonempty A0 \Rightarrow \forall A1.nonempty A1 \Rightarrow nonempty (ty_2Epair_2Eprod A0 A1) \tag{1}$$

Let $c_2Epair_2EABS_prod : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow \forall A_27b.nonempty A_27b \Rightarrow c_2Epair_2EABS_prod A_27a A_27b \in ((ty_2Epair_2Eprod A_27a A_27b)^{(2^{A_27b})^{A_27a}}) \tag{2}$$

Definition 8 We define $c_2Epair_2E_2C$ to be $\lambda A_27a : \iota.\lambda A_27b : \iota.\lambda V0x \in A_27a.\lambda V1y \in A_27b.(ap (c_2Epair_2EABS_prod A_27a A_27b) (\lambda V2z \in 2.V2z))$

Let $c_2Epred_set_2EGSPEC : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow \forall A_27b.nonempty A_27b \Rightarrow c_2Epred_set_2EGSPEC A_27a A_27b \in ((2^{A_27a})^{(ty_2Epair_2Eprod A_27a 2)^{A_27b}}) \tag{3}$$

Definition 9 We define $c_2Epred_set_2EUNION$ to be $\lambda A_27a : \iota.\lambda V0s \in (2^{A_27a}).\lambda V1t \in (2^{A_27a}).(ap (c_2Epair_2E_2C A_27a A_27a) (\lambda V2u \in 2.V2u))$

Definition 10 We define `c_2Ebool_2EF` to be $(\text{ap } (c_2Ebool_2E_21 \ 2) \ (\lambda V0t \in 2.V0t))$.

Definition 11 We define `c_2Emin_2E_40` to be $\lambda A.\lambda P \in 2^A.\text{if } (\exists x \in A.p \ (\text{ap } P \ x)) \ \text{then } (the \ (\lambda x.x \in A)\ \text{of type } \iota \Rightarrow \iota)$.

Definition 12 We define `c_2Ebool_2ECOND` to be $\lambda A_27a : \iota.(\lambda V0t \in 2.(\lambda V1t1 \in A_27a.(\lambda V2t2 \in A_27a.$

Definition 13 We define `c_2Ebool_2E_3F` to be $\lambda A_27a : \iota.(\lambda V0P \in (2^{A_27a}))$.

Definition 14 We define `c_2Epred__set_2EIMAGE` to be $\lambda A_27a : \iota.\lambda A_27b : \iota.\lambda V0f \in (A_27b^{A_27a}).\lambda V1s \in$

Definition 15 We define `c_2Epred__set_2ESUBSET` to be $\lambda A_27a : \iota.\lambda V0s \in (2^{A_27a}).\lambda V1t \in (2^{A_27a}).(\text{ap } ($

Definition 16 We define `c_2Epred__set_2EPOW` to be $\lambda A_27a : \iota.\lambda V0set \in (2^{A_27a}).(\text{ap } (c_2Epred_set_2E$

Definition 17 We define `c_2Epred__set_2EINSERT` to be $\lambda A_27a : \iota.\lambda V0x \in A_27a.\lambda V1s \in (2^{A_27a}).(\text{ap } (c_2$

Definition 18 We define `c_2Epred__set_2EEMPTY` to be $\lambda A_27a : \iota.(\lambda V0x \in A_27a.c_2Ebool_2EF)$.

Definition 19 We define `c_2Ebool_2E_7E` to be $(\lambda V0t \in 2.(\text{ap } (\text{ap } c_2Emin_2E_3D_3D_3E \ V0t) \ c_2Ebool_2E$

Definition 20 We define `c_2Epred__set_2EDIFF` to be $\lambda A_27a : \iota.\lambda V0s \in (2^{A_27a}).\lambda V1t \in (2^{A_27a}).(\text{ap } (c_2$

Definition 21 We define `c_2Epred__set_2EDEDELETE` to be $\lambda A_27a : \iota.\lambda V0s \in (2^{A_27a}).\lambda V1x \in A_27a.(\text{ap } (ap$

Assume the following.

$$\text{True} \quad (4)$$

Assume the following.

$$(\forall V0t1 \in 2.(\forall V1t2 \in 2.(((p \ V0t1) \Rightarrow (p \ V1t2)) \Rightarrow (((p \ V1t2) \Rightarrow (p \ V0t1)) \Rightarrow ((p \ V0t1) \Leftrightarrow (p \ V1t2)))))) \quad (5)$$

Assume the following.

$$(\forall V0t \in 2.(False \Rightarrow (p \ V0t))) \quad (6)$$

Assume the following.

$$(\forall V0t \in 2.((p \ V0t) \vee \neg (p \ V0t))) \quad (7)$$

Assume the following.

$$\begin{aligned} & (\forall V0t \in 2.(((True \wedge (p \ V0t)) \Leftrightarrow (p \ V0t)) \wedge (((p \ V0t) \wedge True) \Leftrightarrow \\ & (p \ V0t)) \wedge (((False \wedge (p \ V0t)) \Leftrightarrow False) \wedge (((p \ V0t) \wedge False) \Leftrightarrow False) \wedge \\ & (((p \ V0t) \wedge (p \ V0t)) \Leftrightarrow (p \ V0t)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & (\forall V0t \in 2.(((True \vee (p \ V0t)) \Leftrightarrow True) \wedge (((p \ V0t) \vee True) \Leftrightarrow True) \wedge \\ & (((False \vee (p \ V0t)) \Leftrightarrow (p \ V0t)) \wedge (((p \ V0t) \vee False) \Leftrightarrow (p \ V0t)) \wedge (((p \ V0t) \vee \\ & (p \ V0t)) \Leftrightarrow (p \ V0t)))))) \end{aligned} \quad (9)$$

Assume the following.

$$(\forall V0t \in 2.(((True \Rightarrow (p V0t)) \Leftrightarrow (p V0t)) \wedge (((p V0t) \Rightarrow True) \Leftrightarrow True) \wedge (((False \Rightarrow (p V0t)) \Leftrightarrow True) \wedge (((p V0t) \Rightarrow (p V0t)) \Leftrightarrow True) \wedge ((p V0t) \Rightarrow False) \Leftrightarrow (\neg(p V0t)))))) \quad (10)$$

Assume the following.

$$((\forall V0t \in 2.((\neg(\neg(p V0t))) \Leftrightarrow (p V0t)) \wedge (((\neg True) \Leftrightarrow False) \wedge ((\neg False) \Leftrightarrow True))) \quad (11)$$

Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.(V0x = V0x)) \quad (12)$$

Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.((V0x = V0x) \Leftrightarrow True)) \quad (13)$$

Assume the following.

$$\forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a.(\forall V1y \in A_27a.((V0x = V1y) \Leftrightarrow (V1y = V0x)))) \quad (14)$$

Assume the following.

$$(\forall V0t \in 2.(((True \Leftrightarrow (p V0t)) \Leftrightarrow (p V0t)) \wedge (((p V0t) \Leftrightarrow True) \Leftrightarrow (p V0t)) \wedge (((False \Leftrightarrow (p V0t)) \Leftrightarrow (\neg(p V0t))) \wedge (((p V0t) \Leftrightarrow False) \Leftrightarrow (\neg(p V0t)))))) \quad (15)$$

Assume the following.

$$(\forall V0A \in 2.(\forall V1B \in 2.(\forall V2C \in 2.(((p V0A) \vee (p V1B) \wedge (p V2C)) \Leftrightarrow (((p V0A) \vee (p V1B)) \wedge ((p V0A) \vee (p V2C)))))) \quad (16)$$

Assume the following.

$$(\forall V0t1 \in 2.(\forall V1t2 \in 2.(\forall V2t3 \in 2.(((p V0t1) \Rightarrow ((p V1t2) \Rightarrow (p V2t3))) \Leftrightarrow (((p V0t1) \wedge (p V1t2)) \Rightarrow (p V2t3)))))) \quad (17)$$

Assume the following.

$$(\forall V0x \in 2.(\forall V1x_27 \in 2.(\forall V2y \in 2.(\forall V3y_27 \in 2.(((p V0x) \Leftrightarrow (p V1x_27)) \wedge ((p V1x_27) \Rightarrow ((p V2y) \Leftrightarrow (p V3y_27)))))) \Rightarrow (((p V0x) \Rightarrow (p V2y)) \Leftrightarrow ((p V1x_27) \Rightarrow (p V3y_27)))))) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty A_27a \Rightarrow (\forall V0P \in 2.(\forall V1Q \in 2. \\ & (\forall V2x \in A_27a.(\forall V3x_27 \in A_27a.(\forall V4y \in A_27a. \\ & (\forall V5y_27 \in A_27a.(((p V0P) \Leftrightarrow (p V1Q)) \wedge (((p V1Q) \Rightarrow (V2x = V3x_27)) \wedge \\ & ((\neg(p V1Q)) \Rightarrow (V4y = V5y_27)))))) \Rightarrow ((ap (ap (ap (c_2Ebool_2ECOND A_27a) \\ & V0P) V2x) V4y) = (ap (ap (ap (c_2Ebool_2ECOND A_27a) V1Q) V3x_27) \\ & V5y_27)))))) \quad (19) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & ((\forall V0t1 \in A.27a.(\forall V1t2 \in \\ & A.27a.((ap\ (ap\ (ap\ (c.2Ebool.2ECOND\ A.27a)\ c.2Ebool.2ET)\ V0t1) \\ & V1t2) = V0t1))) \wedge (\forall V2t1 \in A.27a.(\forall V3t2 \in A.27a.((ap \\ & (ap\ (ap\ (c.2Ebool.2ECOND\ A.27a)\ c.2Ebool.2EF)\ V2t1)\ V3t2) = V3t2)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0s \in (2^{A.27a}).(\forall V1t \in \\ & (2^{A.27a}).((V0s = V1t) \Leftrightarrow (\forall V2x \in A.27a.((p\ (ap\ (ap\ (c.2Ebool.2EIN \\ & A.27a)\ V2x)\ V0s)) \Leftrightarrow (p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a)\ V2x)\ V1t))))))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0s \in (2^{A.27a}).(\forall V1t \in \\ & (2^{A.27a}).(\forall V2u \in (2^{A.27a}).(((p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET \\ & A.27a)\ V0s)\ V1t)) \wedge (p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET\ A.27a)\ V1t) \\ & V2u)))) \Rightarrow (p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET\ A.27a)\ V0s)\ V2u)))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0s \in (2^{A.27a}).(\forall V1t \in \\ & (2^{A.27a}).(\forall V2x \in A.27a.((p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a) \\ & V2x)\ (ap\ (ap\ (c.2Epred_set.2EUNION\ A.27a)\ V0s)\ V1t))) \Leftrightarrow ((p\ (ap \\ & (ap\ (c.2Ebool.2EIN\ A.27a)\ V2x)\ V0s)) \vee (p\ (ap\ (ap\ (c.2Ebool.2EIN \\ & A.27a)\ V2x)\ V1t)))))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0x \in A.27a.(\forall V1y \in \\ & A.27a.(\forall V2s \in (2^{A.27a}).((p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a) \\ & V0x)\ (ap\ (ap\ (c.2Epred_set.2EINSERT\ A.27a)\ V1y)\ V2s))) \Leftrightarrow ((V0x = \\ & V1y) \vee (p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a)\ V0x)\ V2s)))))) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0x \in A.27a.(\forall V1s \in \\ & (2^{A.27a}).(\forall V2t \in (2^{A.27a}).((p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET \\ & A.27a)\ (ap\ (ap\ (c.2Epred_set.2EINSERT\ A.27a)\ V0x)\ V1s))\ V2t)) \Leftrightarrow \\ & ((p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a)\ V0x)\ V2t)) \wedge (p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET \\ & A.27a)\ V1s)\ V2t)))))) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} \forall A.27a.nonempty\ A.27a \Rightarrow & (\forall V0x \in A.27a.(\forall V1s \in \\ & (2^{A.27a}).((\neg (p\ (ap\ (ap\ (c.2Ebool.2EIN\ A.27a)\ V0x)\ V1s))) \Rightarrow (\forall V2t \in \\ & (2^{A.27a}).((p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET\ A.27a)\ V1s)\ (ap \\ & (ap\ (c.2Epred_set.2EINSERT\ A.27a)\ V0x)\ V2t))) \Leftrightarrow (p\ (ap\ (ap\ (c.2Epred_set.2ESUBSET \\ & A.27a)\ V1s)\ V2t)))))) \end{aligned} \quad (26)$$

Assume the following.

$$(2^{A-27a}).(p (ap (ap (c_2Epred_set_2ESUBSET A_27a) (ap (ap (c_2Epred_set_2EDELETE A_27a) V1s) V0x)) V1s)))) \quad (27)$$

Assume the following.

$$\begin{aligned} \forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a. (\forall V1y \in \\ A_27a. (\forall V2s \in (2^{A-27a}). ((ap (ap (c_2Epred_set_2EDELETE \\ A_27a) (ap (ap (c_2Epred_set_2EINSERT A_27a) V0x) V2s)) V1y) = \\ (ap (ap (ap (c_2Ebool_2ECOND (2^{A-27a}) (ap (ap (c_2Emin_2E_3D \\ A_27a) V0x) V1y)) (ap (ap (c_2Epred_set_2EDELETE A_27a) V2s) V1y)) \\ (ap (ap (c_2Epred_set_2EINSERT A_27a) V0x) (ap (ap (c_2Epred_set_2EDELETE \\ A_27a) V2s) V1y)))))))))) \end{aligned} \quad (28)$$

Assume the following.

$$\begin{aligned} \forall A_27a.nonempty A_27a \Rightarrow (\forall V0x \in A_27a. (\forall V1s \in \\ (2^{A-27a}). ((p (ap (ap (c_2Ebool_2EIN A_27a) V0x) V1s)) \Rightarrow ((ap (ap \\ (c_2Epred_set_2EINSERT A_27a) V0x) (ap (ap (c_2Epred_set_2EDELETE \\ A_27a) V1s) V0x)) = V1s)))))) \end{aligned} \quad (29)$$

Assume the following.

$$\begin{aligned} \forall A_27a.nonempty A_27a \Rightarrow \forall A_27b.nonempty A_27b \Rightarrow (\\ \forall V0y \in A_27b. (\forall V1s \in (2^{A-27a}). (\forall V2f \in (A_27b^{A-27a}). \\ ((p (ap (ap (c_2Ebool_2EIN A_27b) V0y) (ap (ap (c_2Epred_set_2EIMAGE \\ A_27a A_27b) V2f) V1s))) \Leftrightarrow (\exists V3x \in A_27a. ((V0y = (ap V2f V3x)) \wedge \\ (p (ap (ap (c_2Ebool_2EIN A_27a) V3x) V1s)))))))))) \end{aligned} \quad (30)$$

Assume the following.

$$\begin{aligned} \forall A_27a.nonempty A_27a \Rightarrow (\forall V0set \in (2^{A-27a}). (\forall V1e \in \\ (2^{A-27a}). ((p (ap (ap (c_2Ebool_2EIN (2^{A-27a}) V1e) (ap (c_2Epred_set_2EPOW \\ A_27a) V0set))) \Leftrightarrow (p (ap (ap (c_2Epred_set_2ESUBSET A_27a) V1e) \\ V0set)))))) \end{aligned} \quad (31)$$

Assume the following.

$$\begin{aligned} \forall A_27a.nonempty A_27a \Rightarrow (\forall V0e \in A_27a. (\forall V1s1 \in \\ (2^{A-27a}). (\forall V2s2 \in (2^{A-27a}). ((p (ap (ap (c_2Epred_set_2ESUBSET \\ A_27a) V1s1) V2s2)) \Rightarrow (p (ap (ap (c_2Epred_set_2ESUBSET A_27a) \\ V1s1) (ap (ap (c_2Epred_set_2EINSERT A_27a) V0e) V2s2)))))) \end{aligned} \quad (32)$$

Assume the following.

$$\begin{aligned} & \forall A_27a.nonempty\ A_27a \Rightarrow (\forall V0s1 \in (2^{A_27a}). (\forall V1s2 \in \\ & (2^{A_27a}). (\forall V2x \in A_27a. ((p\ (ap\ (ap\ (c_2Epred_set_2ESUBSET \\ & A_27a)\ V0s1)\ V1s2)) \Rightarrow (p\ (ap\ (ap\ (c_2Epred_set_2ESUBSET\ A_27a) \\ & (ap\ (ap\ (c_2Epred_set_2EDELETE\ A_27a)\ V0s1)\ V2x))\ (ap\ (ap\ (c_2Epred_set_2EDELETE \\ & A_27a)\ V1s2)\ V2x))))))))) \end{aligned} \quad (33)$$

Assume the following.

$$(\forall V0t \in 2. ((\neg(\neg(p\ V0t))) \Leftrightarrow (p\ V0t))) \quad (34)$$

Assume the following.

$$(\forall V0A \in 2. ((p\ V0A) \Rightarrow ((\neg(p\ V0A)) \Rightarrow False))) \quad (35)$$

Assume the following.

$$\begin{aligned} & (\forall V0A \in 2. (\forall V1B \in 2. (((\neg((\neg(p\ V0A) \vee (p\ V1B))) \Rightarrow False) \Leftrightarrow \\ & ((p\ V0A) \Rightarrow False) \Rightarrow ((\neg(p\ V1B)) \Rightarrow False)))))) \end{aligned} \quad (36)$$

Assume the following.

$$\begin{aligned} & (\forall V0A \in 2. (\forall V1B \in 2. (((\neg((\neg(p\ V0A) \vee (p\ V1B))) \Rightarrow False) \Leftrightarrow \\ & ((p\ V0A) \Rightarrow ((\neg(p\ V1B)) \Rightarrow False)))))) \end{aligned} \quad (37)$$

Assume the following.

$$(\forall V0A \in 2. (((\neg(p\ V0A)) \Rightarrow False) \Rightarrow (((p\ V0A) \Rightarrow False) \Rightarrow False))) \quad (38)$$

Assume the following.

$$\begin{aligned} & (\forall V0p \in 2. (\forall V1q \in 2. (\forall V2r \in 2. (((p\ V0p) \Leftrightarrow (\\ & (p\ V1q) \Leftrightarrow (p\ V2r))) \Leftrightarrow (((p\ V0p) \vee ((p\ V1q) \vee (p\ V2r))) \wedge (((p\ V0p) \vee ((\neg \\ & p\ V2r)) \vee (\neg(p\ V1q)))) \wedge (((p\ V1q) \vee ((\neg(p\ V2r)) \vee (\neg(p\ V0p)))) \wedge ((p\ V2r) \vee \\ & ((\neg(p\ V1q)) \vee (\neg(p\ V0p)))))))))) \end{aligned} \quad (39)$$

Assume the following.

$$\begin{aligned} & (\forall V0p \in 2. (\forall V1q \in 2. (\forall V2r \in 2. (((p\ V0p) \Leftrightarrow (\\ & (p\ V1q) \wedge (p\ V2r))) \Leftrightarrow (((p\ V0p) \vee ((\neg(p\ V1q)) \vee (\neg(p\ V2r)))) \wedge (((p\ V1q) \vee \\ & (\neg(p\ V0p))) \wedge ((p\ V2r) \vee (\neg(p\ V0p)))))))))) \end{aligned} \quad (40)$$

Assume the following.

$$\begin{aligned} & (\forall V0p \in 2. (\forall V1q \in 2. (\forall V2r \in 2. (((p\ V0p) \Leftrightarrow (\\ & (p\ V1q) \vee (p\ V2r))) \Leftrightarrow (((p\ V0p) \vee (\neg(p\ V1q))) \wedge (((p\ V0p) \vee (\neg(p\ V2r))) \wedge \\ & ((p\ V1q) \vee ((p\ V2r) \vee (\neg(p\ V0p)))))))))) \end{aligned} \quad (41)$$

Assume the following.

$$(\forall V0p \in 2. (\forall V1q \in 2. (\forall V2r \in 2. (((p V0p) \Leftrightarrow (p V1q) \Rightarrow (p V2r)) \Leftrightarrow (((p V0p) \vee (p V1q)) \wedge (((p V0p) \vee \neg(p V2r))) \wedge (\neg(p V1q) \vee ((p V2r) \vee \neg(p V0p)))))))) \quad (42)$$

Assume the following.

$$(\forall V0p \in 2. (\forall V1q \in 2. (((p V0p) \Leftrightarrow \neg(p V1q)) \Leftrightarrow (((p V0p) \vee (p V1q)) \wedge (\neg(p V1q) \vee \neg(p V0p)))))) \quad (43)$$

Assume the following.

$$(\forall V0p \in 2. (\forall V1q \in 2. (\neg((p V0p) \Rightarrow (p V1q))) \Rightarrow (p V0p))) \quad (44)$$

Assume the following.

$$(\forall V0p \in 2. (\forall V1q \in 2. (\neg((p V0p) \Rightarrow (p V1q))) \Rightarrow \neg(p V1q))) \quad (45)$$

Theorem 1

$$\forall A_{.27a}. \text{nonempty } A_{.27a} \Rightarrow (\forall V0e \in A_{.27a}. (\forall V1s \in (2^{A_{.27a}}). ((\text{ap } (c_2Epred_set_2EPOW } A_{.27a}) (\text{ap } (\text{ap } (c_2Epred_set_2EINSERT } A_{.27a}) V0e) V1s)) = (\text{ap } (\text{ap } (c_2Epred_set_2EUNION } (2^{A_{.27a}})) (\text{ap } (\text{ap } (c_2Epred_set_2EIMAGE } (2^{A_{.27a}}) (2^{A_{.27a}})) (\text{ap } (c_2Epred_set_2EINSERT } A_{.27a}) V0e)) (\text{ap } (c_2Epred_set_2EPOW } A_{.27a}) V1s))) (\text{ap } (c_2Epred_set_2EPOW } A_{.27a}) V1s))))))$$