

t40_incsp_1 (TM-
bkvAP1W8QcJe8CqpUQGefT9HVGq39shVN)

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Let $v15_incsp_1 : \iota \Rightarrow o$ be given. Let $l2_incsp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_incsp_1 : \iota \Rightarrow \iota$ be given. Let $v3_incsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_incsp_1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r5_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_incsp_1 : \iota \Rightarrow o$ be given. Let $u2_incsp_1 : \iota \Rightarrow \iota$ be given. Let $r4_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(l2_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_incsp_1 X0))) \Rightarrow (((r5_incsp_1 \\ & X0 X3 X2) \wedge (r2_incsp_1 X0 X1 X2)) \Leftrightarrow (r5_incsp_1 X0 (k4_subset_1 (u1_incsp_1 \\ & X0) X3 (k6_domain_1 (u1_incsp_1 X0) X1)) X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k1_enumset1 X0 X1 X2 = k1_enumset1 X0 X2 X1 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l2_incsp_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_incsp_1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u4_incsp_1 X0)) \Rightarrow ((r5_incsp_1 X0 (k7_domain_1 \\ & (u1_incsp_1 X0) X1 X2) X3) \Leftrightarrow ((r2_incsp_1 X0 X1 X3) \wedge (r2_incsp_1 X0 \\ & X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k1_enumset1\ X0\ X1\ X2 = k2_xboole_0\ (k2_tarSKI\ X0\ X1)\ (k1_tarSKI\ X2) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v15_incsp_1\ X0)\wedge(l2_incsp_1\ X0))\Rightarrow(\forall X1.(\\ m1_subset_1\ X1\ (u1_incsp_1\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (\\ u1_incsp_1\ X0))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (u1_incsp_1\ X0))\Rightarrow \\ ((r1_incsp_1\ X0\ X3\ (k1_incsp_1\ X0\ X1\ X2))\Rightarrow((X1 = X2)\vee(v3_incsp_1 \\ (k8_domain_1\ (u1_incsp_1\ X0)\ X1\ X2\ X3)\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_incsp_1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u2_incsp_1 \\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_incsp_1\ X0))\Rightarrow(\forall X3. \\ (m1_subset_1\ X3\ (u1_incsp_1\ X0))\Rightarrow((r4_incsp_1\ X0\ (k7_domain_1 \\ (u1_incsp_1\ X0)\ X2\ X3)\ X1)\Leftrightarrow((r1_incsp_1\ X0\ X2\ X1)\wedge(r1_incsp_1\ X0 \\ X3\ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((v15_incsp_1\ X0)\wedge(l2_incsp_1\ X0))\Rightarrow(\forall X1.(\\ m1_subset_1\ X1\ (u1_incsp_1\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (\\ u1_incsp_1\ X0))\Rightarrow(v3_incsp_1\ (k8_domain_1\ (u1_incsp_1\ X0)\ X1\ X1 \\ X2)\ X0))) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v15_incsp_1\ X0)\wedge(l2_incsp_1\ X0))\Rightarrow(\forall X1.(\\ m1_subset_1\ X1\ (u2_incsp_1\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (\\ u4_incsp_1\ X0))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_incsp_1 \\ X0))\Rightarrow(((r4_incsp_1\ X0\ X3\ X1)\wedge(r3_incsp_1\ X0\ X1\ X2))\Rightarrow(r5_incsp_1 \\ X0\ X3\ X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0\ X0)\wedge \\ ((m1_subset_1\ X1\ X0)\wedge((m1_subset_1\ X2\ X0)\wedge(m1_subset_1\ X3\ X0))))\Rightarrow \\ (k8_domain_1\ X0\ X1\ X2\ X3 = k1_enumset1\ X1\ X2\ X3) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0)\wedge((m1_subset_1 \\ X1\ X0)\wedge(m1_subset_1\ X2\ X0)))\Rightarrow(k7_domain_1\ X0\ X1\ X2 = k2_tarSKI\ X1 \\ X2) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow (k6_domain_1 X0 X1 = k1_tarski X1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(m1_subset_1 X2 (k1_zfmisc_1 X0)))\Rightarrow(k4_subset_1 X0 X1 X2 = k2_xboole_0 X1 X2) \quad (12)$$

Assume the following.

$$\forall X0.(l1_incsp_1 X0)\Rightarrow(\neg v1_xboole_0 (u1_incsp_1 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l2_incsp_1 X0)\Rightarrow(l1_incsp_1 X0) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 X1 X0)\wedge(m1_subset_1 X2 X0)))\Rightarrow(m1_subset_1 (k7_domain_1 X0 X1 X2) (k1_zfmisc_1 X0)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow (m1_subset_1 (k6_domain_1 X0 X1) (k1_zfmisc_1 X0)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v15_incsp_1 X0)\wedge(l2_incsp_1 X0))\wedge((m1_subset_1 X1 (u2_incsp_1 X0))\wedge(m1_subset_1 X2 (u2_incsp_1 X0))))\Rightarrow(m1_subset_1 (k4_incsp_1 X0 X1 X2) (u4_incsp_1 X0)) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v15_incsp_1 X0)\wedge(l2_incsp_1 X0))\wedge((m1_subset_1 X1 (u1_incsp_1 X0))\wedge((m1_subset_1 X2 (u1_incsp_1 X0))\wedge(m1_subset_1 X3 (u1_incsp_1 X0)))))\Rightarrow(m1_subset_1 (k2_incsp_1 X0 X1 X2 X3) (u4_incsp_1 X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v15_incsp_1 X0)\wedge(l2_incsp_1 X0))\wedge((m1_subset_1 X1 (u1_incsp_1 X0))\wedge(m1_subset_1 X2 (u1_incsp_1 X0))))\Rightarrow(m1_subset_1 (k1_incsp_1 X0 X1 X2) (u2_incsp_1 X0)) \quad (19)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v15_incsp_1 X0) \wedge (l2_incsp_1 X0)) \Rightarrow (\forall X1.(\\
& \quad m1_subset_1 X1 (u2_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\
& \quad u2_incsp_1 X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\exists X3.(m1_subset_1 X3 (u1_incsp_1 \\
& \quad X0)) \wedge ((r1_incsp_1 X0 X3 X1) \wedge (r1_incsp_1 X0 X3 X2)))) \wedge (\neg \forall X3. \\
& \quad (m1_subset_1 X3 (u4_incsp_1 X0)) \Rightarrow ((X3 = k4_incsp_1 X0 X1 X2) \Leftrightarrow ((\\
& \quad r3_incsp_1 X0 X1 X3) \wedge (r3_incsp_1 X0 X2 X3)))))))))
\end{aligned} \tag{20}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v15_incsp_1 X0) \wedge (l2_incsp_1 X0)) \Rightarrow (\forall X1.(\\
& \quad m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\
& \quad u1_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow \\
& \quad ((\neg v3_incsp_1 (k8_domain_1 (u1_incsp_1 X0) X1 X2 X3) X0) \Rightarrow (\forall X4. \\
& \quad (m1_subset_1 X4 (u4_incsp_1 X0)) \Rightarrow ((X4 = k2_incsp_1 X0 X1 X2 X3) \Leftrightarrow \\
& \quad (r5_incsp_1 X0 (k8_domain_1 (u1_incsp_1 X0) X1 X2 X3) X4)))))))))
\end{aligned} \tag{21}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v15_incsp_1 X0) \wedge (l2_incsp_1 X0)) \Rightarrow (\forall X1.(\\
& \quad m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\
& \quad u1_incsp_1 X0)) \Rightarrow ((X1 \neq X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (u2_incsp_1 \\
& \quad X0)) \Rightarrow ((X3 = k1_incsp_1 X0 X1 X2) \Leftrightarrow (r4_incsp_1 X0 (k7_domain_1 (u1_incsp_1 \\
& \quad X0) X1 X2) X3))))))
\end{aligned} \tag{22}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\
& \quad X1 X0) \wedge (m1_subset_1 X2 X0))) \Rightarrow (k7_domain_1 X0 X1 X2 = k7_domain_1 \\
& \quad X0 X2 X1)
\end{aligned} \tag{23}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v15_incsp_1 X0) \wedge (l2_incsp_1 X0)) \Rightarrow (\forall X1.(\\
& \quad m1_subset_1 X1 (u1_incsp_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\
& \quad u1_incsp_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_incsp_1 X0)) \Rightarrow \\
& \quad ((\neg v3_incsp_1 (k8_domain_1 (u1_incsp_1 X0) X1 X2 X3) X0) \Rightarrow (k2_incsp_1 \\
& \quad X0 X1 X2 X3 = k4_incsp_1 X0 (k1_incsp_1 X0 X1 X2) (k1_incsp_1 X0 X1 X3))))))
\end{aligned}$$