

t5_ens_1

(TMaYmf45BawYHD7opL75qZZjEC2ZcBYS8Mq)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_ens_1 : \iota \Rightarrow \iota$ be given. Let $k1_ens_1 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (X1 \in k1_ens_1 X0) \Leftrightarrow (\exists X2. (m1_subset_1 X2 X0) \wedge (\exists X3. (m1_subset_1 X3 X0) \wedge \\ (((X3 = k1_xboole_0) \Rightarrow (X2 = k1_xboole_0)) \wedge (v1_funct_1 X1) \wedge (v1_funct_2 X1 X2 X3) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow \\ & (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \quad (6)$$

Assume the following.

$$\exists X0.v1_xboole_0 X0 \quad (7)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(\neg v1_xboole_0 X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\exists X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\wedge((v1_xboole_0 X2)\wedge((v1_relat_1 X2)\wedge((\\ & v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\neg v1_xboole_0 (k1_zfmisc_1 X0) \quad (10)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow((v4_funct_1 (k1_ens_1 X0))\wedge(\neg v1_xboole_0 (k1_ens_1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow(\neg v1_xboole_0 (k2_zfmisc_1 X0 X1)) \quad (12)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow \\ & (m1_subset_1 (k1_domain_1 X0 X1 X2 X3) (k2_zfmisc_1 X0 X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (k2_ens_1 X0 = ReplSep3 (toset (\lambda X1 : \\
& \quad \iota.m1_subset_1 X1 X0)) (\lambda X1 : \iota.toset (\lambda X2 : \iota.m1_subset_1 \\
& \quad X2 X0)) (\lambda X1 : \iota.\lambda X2 : \iota.toset (\lambda X3 : \iota.m1_subset_1 \\
& \quad X3 (k1_ens_1 X0))) (\lambda X1 : \iota.\lambda X2 : \iota.\lambda X3 : \iota.((X2 = \\
& \quad k1_xboole_0) \Rightarrow (X1 = k1_xboole_0)) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& \quad X3 X1 X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X2)))))) \\
& \quad (\lambda X1 : \iota.\lambda X2 : \iota.\lambda X3 : \iota.k1_domain_1 (k2_zfmisc_1 \\
& \quad X0 X0) (k1_ens_1 X0) (k1_domain_1 X0 X0 X1 X2) X3))
\end{aligned} \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow \\
& \quad (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow \\
& \quad (((v1_funct_1 X2) \wedge (v1_funct_2 X2 X0 X1)) \Rightarrow ((v1_funct_1 X2) \wedge ((\\
& \quad \neg v1_xboole_0 X2) \wedge (v1_funct_2 X2 X0 X1))))))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 \\
& \quad X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0))))
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\
& \quad \forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X1)) \Rightarrow (v4_relat_1 X2 X0))
\end{aligned} \tag{20}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(v1_xboole_0 X0) \Rightarrow (\forall X2.(m1_subset_1 \\
& \quad X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))) \Rightarrow (v1_xboole_0 X2))
\end{aligned} \tag{21}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(v1_xboole_0 X0) \Rightarrow (\forall X2.(m1_subset_1 \\
& \quad X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_xboole_0 X2))
\end{aligned} \tag{22}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1))
\end{aligned} \tag{23}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\
& \quad X0)) \Rightarrow (v1_relat_1 X1))
\end{aligned} \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(v1_funct_1 X0) \quad (26)$$

Theorem 1

$$\begin{aligned} &\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow \\ &\quad (\forall X2.(m1_subset_1 X2 X0)\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge \\ &\quad ((v1_funct_2 X3 X1 X2)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ &\quad X1 X2))))))\Rightarrow(((X2 = k1_xboole_0)\Rightarrow(X1 = k1_xboole_0))\Rightarrow(k1_domain_1 \\ &\quad (k2_zfmisc_1 X0 X0) (k1_zfmisc_1 (k2_zfmisc_1 X1 X2)) (k1_domain_1 \\ &\quad X0 X0 X1 X2) X3 \in k2_ens_1 X0)))) \end{aligned}$$