

t70_funct_5
(TMGc696d8YdjoUPALfuxhQMLGTBWR7jg1YB)

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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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_funct_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_funct_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_5 : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow (((k4_tarski \\ & X0 X1 \in k9_xtuple_0 X2) \wedge (X3 = k1_funct_1 (k3_funct_5 X2) X1)) \Rightarrow ((\\ & X0 \in k9_xtuple_0 X3) \wedge (k1_funct_1 X3 X0 = k1_binop_1 X2 X0 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X1) \wedge (m1_funct_2 X2 X0 X1)) \Rightarrow (\forall X3.(m2_funct_2 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 X2)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_funct_1 X3) \wedge (\\ & v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))))) \wedge ((m1_subset_1 X4 X0) \wedge \\ & (m1_subset_1 X5 X1)))) \Rightarrow (k2_binop_1 X0 X1 X2 X3 X4 X5 = k1_binop_1 \\ & X3 X4 X5) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\ & (k1_domain_1 X0 X1 X2 X3 = k4_tarSKI X2 X3) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1) X2)))))))) \Rightarrow (k12_funct_5 X0 X1 X2 X3 = k3_funct_5 \\ & X3) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X2) \wedge ((m1_funct_2 X3 X1 X2) \wedge \\ & (((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X3) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X3)))))) \wedge (m1_subset_1 X5 X0)))) \Rightarrow (k10_funct_5 \\ & X0 X1 X2 X3 X4 X5 = k1_funct_1 X4 X5) \end{aligned} \tag{9}$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \tag{10}$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow (\neg v1_xboole_0 (k2_zfmisc_1 X0 X1)) \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3. (m2_funct_2 X3 X0 X1 X2) \Rightarrow ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(m1_funct_2 (k9_funct_2 X0 X1) X0 X1) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(m1_subset_1 (k3_funct_2 X0 X1 X2 X3) X1) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow(m1_subset_1 (k1_domain_1 X0 X1 X2 X3) (k2_zfmisc_1 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2))))))))\Rightarrow((v1_funct_1 (k12_funct_5 X0 X1 X2 X3))\wedge((v1_funct_2 (k12_funct_5 X0 X1 X2 X3) X1 (k9_funct_2 X0 X2))\wedge(m1_subset_1 (k12_funct_5 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X1 (k9_funct_2 X0 X2)))))) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(((X1\neq k1_xboole_0)\Rightarrow((v1_funct_2 X2 X0 X1)\Leftrightarrow(X0 = k1_relset_1 X0 X2)))\wedge((X1 = k1_xboole_0)\Rightarrow((v1_funct_2 X2 X0 X1)\Leftrightarrow(X2 = k1_xboole_0)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (19)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow \\ & (\forall X4.(m1_subset_1 X4 X1) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge \\ & ((v1_funct_2 X5 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X5 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))))) \Rightarrow (k2_binop_1 X0 X1 X2 X5 \\ X3 X4 = k3_funct_2 X0 X2 (k10_funct_5 X1 X0 X2 (k9_funct_2 X0 X2) (k12_funct_5 \\ X0 X1 X2 X5) X4) X3)))))) \end{aligned}$$