

t16_ndiff_4 (TMcopUt- BqJy4hgpwVwKRDtt4DDt5hDCXSCy)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k2_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k1_real_ns1 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Let $k2_real_ns1 : \iota \Rightarrow \iota$ be given. Let $u1_normsp_0 : \iota \Rightarrow \iota$ be given. Let $k3_real_ns1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & \quad (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 k1_numbers)) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers \\ & (k1_euclid X0)))))) \Rightarrow ((r2_ndiff_4 X0 X2 X1) \Rightarrow (v3_rcomp_1 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\ & \quad (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers (k1_euclid X0)))))) \Rightarrow ((r2_ndiff_4 X0 X2 X1) \Leftrightarrow ((r1_tarski \\ & X1 (k1_relset_1 k1_numbers X2)) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow \\ & ((X3 \in X1) \Rightarrow (r1_ndiff_4 X0 X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X1)\wedge(m2_subset_1 X1 k1_numbers \\ k5_numbers))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (\\ k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid X1))))))\Rightarrow((r2_ndiff_4 \\ X1 X2 X0)\Rightarrow(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(\forall X1.((\neg v1_xboole_0 \\ X1)\wedge(m2_subset_1 X1 k1_numbers k5_numbers))\Rightarrow(\forall X2.((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid \\ X1))))))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ (k2_zfmisc_1 k1_numbers (k1_euclid X1))))))\Rightarrow(((r1_ndiff_4 X1 \\ X2 X0)\wedge(r1_ndiff_4 X1 X3 X0))\Rightarrow((r1_ndiff_4 X1 (k8_integr15 X1 k1_numbers \\ X2 X3) X0)\wedge(k1_ndiff_4 X1 (k8_integr15 X1 k1_numbers X2 X3) X0 = k8_euclid \\ X1 (k1_ndiff_4 X1 X2 X0) (k1_ndiff_4 X1 X3 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers)\Rightarrow(\forall X1. \\ (\neg v1_xboole_0 X1)\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 \\ X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 (k4_real_ns1 X0))))))\Rightarrow \\ (\forall X3.((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ X1 (u1_struct_0 (k4_real_ns1 X0))))))\Rightarrow(\forall X4.((v1_funct_1 \\ X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 (k1_euclid X0))))))\Rightarrow \\ (\forall X5.((v1_funct_1 X5)\wedge(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\ X1 (k1_euclid X0))))))\Rightarrow(((X2 = X4)\wedge(X3 = X5))\Rightarrow(k2_vfunct_1 X1 (k4_real_ns1 \\ X0) X2 X3 = k8_integr15 X0 X1 X4 X5)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 \\ X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (8)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (9)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0)\Rightarrow(l2_algstr_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l2_normsp_0 X0)) \quad (11)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge (v1_normsp_1 (k4_real_ns1 X0)) \wedge (l1_normsp_1 (k4_real_ns1 X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & (((\neg v2_struct_0 X1) \wedge (l2_algstr_0 X1)) \wedge (((v1_funct_1 X2) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 X1)))))) \wedge ((v1_funct_1 \\ & X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\ & X1)))))) \Rightarrow ((v1_funct_1 (k2_vfunct_1 X0 X1 X2 X3)) \wedge (m1_subset_1 \\ & (k2_vfunct_1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 (u1_struct_0 \\ & X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0) \wedge (m1_subset_1 \\ & X0 k5_numbers)) \wedge ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers (k1_euclid X0)))))) \Rightarrow ((v1_funct_1 (k2_ndiff_4 \\ & X0 X1 X2)) \wedge (m1_subset_1 (k2_ndiff_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers (k1_euclid X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ & ((v1_normsp_1 X1) \wedge (l1_normsp_1 X1))) \Rightarrow ((X1 = k4_real_ns1 X0) \Leftrightarrow \\ & ((u1_struct_0 X1 = k1_euclid X0) \wedge ((k4_struct_0 X1 = k5_euclid X0) \wedge \\ & (r1_funct_2 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X1)) \\ & (u1_struct_0 X1) (k2_zfmisc_1 (k1_euclid X0) (k1_euclid X0)) (\\ & k1_euclid X0) (u1_algstr_0 X1) (k1_real_ns1 X0)) \wedge (r1_funct_2 \\ & (k2_zfmisc_1 k1_numbers (u1_struct_0 X1) (u1_struct_0 X1) (k2_zfmisc_1 \\ & k1_numbers (k1_euclid X0) (k1_euclid X0) (u1_rlvect_1 X1) (k2_real_ns1 \\ & X0)) \wedge (r1_funct_2 (u1_struct_0 X1) k1_numbers (k1_euclid X0) k1_numbers \\ & (u1_normsp_0 X1) (k3_real_ns1 X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2.(r2_ndiff_4 X0 X1 X2) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow ((X3 = k2_ndiff_4 X0 X1 X2) \Leftrightarrow ((k1_relset_1 \\
& k1_numbers X3 = X2) \wedge (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (\\
& (X4 \in X2) \Rightarrow (k1_funct_1 X3 X4 = k1_ndiff_4 X0 X1 X4))))))))) \\
& \hspace{15em} (17)
\end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (18)$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers)))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid \\
& X0)))))) \Rightarrow (((r1_tarski X1 (k1_relset_1 k1_numbers (k8_integr15 \\
& X0 k1_numbers X2 X3))) \wedge ((r2_ndiff_4 X0 X2 X1) \wedge (r2_ndiff_4 X0 X3 \\
& X1))) \Rightarrow ((r2_ndiff_4 X0 (k8_integr15 X0 k1_numbers X2 X3) X1) \wedge (\forall X4. \\
& (m1_subset_1 X4 k1_numbers) \Rightarrow ((X4 \in X1) \Rightarrow (k1_funct_1 (k2_ndiff_4 \\
& X0 (k8_integr15 X0 k1_numbers X2 X3) X1) X4 = k8_euclid X0 (k1_ndiff_4 \\
& X0 X2 X4) (k1_ndiff_4 X0 X3 X4))))))))))
\end{aligned}$$