

t17_ndiff_4 (TMLQvAUDPbpeMcFr- CpFWAdX2yszpVpEB6Qf)

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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 $v3_funct_1 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_euclid : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ndiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $r2_ndiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_ndiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Let $r1_ndiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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. Let $r1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& \quad (k4_real_ns1 X0)))))) \Rightarrow (\forall X3. (v1_xreal_0 X3) \Rightarrow ((X2 = X1) \Rightarrow \\
& \quad (k1_ndiff_4 X0 X1 X3 = k1_ndiff_3 (k4_real_ns1 X0) X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge \\
& (l1_normsp_1 X0)))))))))) \Rightarrow (\forall X1.((v3_rcomp_1 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow (\forall X2.((v1_funct_1 \\
& X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow (((r1_tarski X1 (k1_relset_1 k1_numbers X2)) \wedge (v3_funct_1 \\
& (k2_partfun1 k1_numbers (u1_struct_0 X0) X2 X1))) \Rightarrow ((r2_ndiff_3 \\
& X0 X2 X1) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (\\
& k1_funct_1 (k2_ndiff_3 X0 X2 X1) X3 = k4_struct_0 X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X2) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 \\
& X0 X1 X2 X3 = k5_relat_1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 \\
& (k5_relat_1 X0 X1)) \wedge (v1_funct_1 (k5_relat_1 X0 X1)))
\end{aligned} \tag{6}$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge \\
& ((v13_algstr_0 (k4_real_ns1 X0)) \wedge ((v2_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v3_rlvect_1 (k4_real_ns1 X0)) \wedge ((v4_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v5_rlvect_1 (k4_real_ns1 X0)) \wedge ((v6_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v7_rlvect_1 (k4_real_ns1 X0)) \wedge ((v8_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v3_normsp_0 (k4_real_ns1 X0)) \wedge ((v4_normsp_0 (k4_real_ns1 \\
& X0)) \wedge ((v1_normsp_1 (k4_real_ns1 X0)) \wedge (v2_normsp_1 (k4_real_ns1 \\
& X0))))))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge ((\neg v7_struct_0 (k4_real_ns1 X0)) \wedge (v1_normsp_1 (k4_real_ns1 X0)))) \quad (9)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (10)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge ((v1_normsp_1 (k4_real_ns1 X0)) \wedge (l1_normsp_1 (k4_real_ns1 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow ((v1_funct_1 (k2_partfun1 X0 X1 X2 X3)) \wedge (m1_subset_1 (k2_partfun1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X0 k5_numbers)) \wedge ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid X0)))))) \Rightarrow ((v1_funct_1 (k2_ndiff_4 X0 X1 X2)) \wedge (m1_subset_1 (k2_ndiff_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid X0)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge (l1_normsp_1 X0)))))))))))))) \wedge ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 X0)))))) \Rightarrow ((v1_funct_1 (k2_ndiff_3 X0 X1 X2)) \wedge (m1_subset_1 (k2_ndiff_3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 X0)))))) \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge \\
& (l1_normsp_1 X0)))))))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(r2_ndiff_3 X0 X1 X2) \Rightarrow (\forall X3.((v1_funct_1 \\
& X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow ((X3 = k2_ndiff_3 X0 X1 X2) \Leftrightarrow ((k1_relset_1 k1_numbers X3 = \\
& X2) \wedge (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow ((X4 \in X2) \Rightarrow (k1_funct_1 \\
& X3 X4 = k1_ndiff_3 X0 X1 X4))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge \\
& (l1_normsp_1 X0)))))))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.(r2_ndiff_3 X0 X1 X2) \Leftrightarrow ((r1_tarski X2 (k1_relset_1 \\
& k1_numbers X1)) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow ((X3 \in \\
& X2) \Rightarrow (r1_ndiff_3 X0 (k2_partfun1 k1_numbers (u1_struct_0 X0) X1 \\
& X2) X3))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((v1_normsp_1 X1) \wedge (l1_normsp_1 X1))) \Rightarrow ((X1 = k4_real_ns1 X0) \Leftrightarrow \\
& ((u1_struct_0 X1 = k1_euclid X0) \wedge ((k4_struct_0 X1 = k5_euclid X0) \wedge \\
& ((r1_funct_2 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X1)) \\
& (u1_struct_0 X1) (k2_zfmisc_1 (k1_euclid X0) (k1_euclid X0)) (\\
& k1_euclid X0) (u1_algstr_0 X1) (k1_real_ns1 X0)) \wedge ((r1_funct_2 \\
& (k2_zfmisc_1 k1_numbers (u1_struct_0 X1)) (u1_struct_0 X1) (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)) (k1_euclid X0) (u1_rlvect_1 X1) (k2_real_ns1 \\
& X0)) \wedge (r1_funct_2 (u1_struct_0 X1) k1_numbers (k1_euclid X0) k1_numbers \\
& (u1_normsp_0 X1) (k3_real_ns1 X0))))))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2.(r2_ndiff_4 X0 X1 X2) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow ((X3 = k2_ndiff_4 X0 X1 X2) \Leftrightarrow ((k1_relset_1 \\
& k1_numbers X3 = X2) \wedge (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (\\
& (X4 \in X2) \Rightarrow (k1_funct_1 X3 X4 = k1_ndiff_4 X0 X1 X4))))))))) \\
& \tag{19}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2.(r2_ndiff_4 X0 X1 X2) \Leftrightarrow \\
& ((r1_tarski X2 (k1_relset_1 k1_numbers X1)) \wedge (\forall X3.(m1_subset_1 \\
& X3 k1_numbers) \Rightarrow ((X3 \in X2) \Rightarrow (r1_ndiff_4 X0 (k2_partfun1 k1_numbers \\
& (k1_euclid X0) X1 X2) X3)))))) \\
& \tag{20}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow (\\
& (r1_ndiff_4 X0 X1 X2) \Leftrightarrow (\exists X3.((v1_funct_1 X3) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 (k4_real_ns1 \\
& X0)))))) \wedge ((X1 = X3) \wedge (r1_ndiff_3 (k4_real_ns1 X0) X3 X2)))))) \\
& \tag{21}
\end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{22}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \tag{23}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{24}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (((r1_tarski X1 (k1_relset_1 k1_numbers \\
& X2)) \wedge (v3_funct_1 (k2_partfun1 k1_numbers (k1_euclid X0) X2 X1)) \Rightarrow \\
& ((r2_ndiff_4 X0 X2 X1) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow \\
& ((X3 \in X1) \Rightarrow (k1_funct_1 (k2_ndiff_4 X0 X2 X1) X3 = k5_euclid X0)))))))))
\end{aligned}$$