

t49_ndiff_4 (TMKbd-
FXRq11WdseMb8wzey1Z8SMFyaQ5QPq)

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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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_ndiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_ndiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v13_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_lopban_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_lopban_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_vfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$

be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge \\
& (l1_normsp_1 X0)))))))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& ((v1_ndiff_3 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (u1_struct_0 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v1_ndiff_3 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (u1_struct_0 X0)))))) \Rightarrow (((v1_funct_1 (k6_vfunct_1 \\
& k1_numbers X0 X1 X2)) \wedge ((v1_ndiff_3 (k6_vfunct_1 k1_numbers X0 \\
& X1 X2) X0) \wedge (m1_subset_1 (k6_vfunct_1 k1_numbers X0 X1 X2) (k1_zfmisc_1 \\
& (k2_zfmisc_1 k1_numbers (u1_struct_0 X0)))))) \wedge ((v1_funct_1 \\
& (k2_vfunct_1 k1_numbers X0 X1 X2)) \wedge ((v1_ndiff_3 (k2_vfunct_1 \\
& k1_numbers X0 X1 X2) X0) \wedge (m1_subset_1 (k2_vfunct_1 k1_numbers \\
& X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 X0)))))))))) \\
& (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_ndiff_3 X2 (k4_real_ns1 X0)) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)))))) \Rightarrow ((k7_partfun1 (u1_struct_0 (k4_real_ns1 \\
& X0)) X2 k6_numbers = k4_struct_0 (k4_real_ns1 X0)) \Rightarrow (\forall X3. \\
& ((v1_funct_1 X3) \wedge ((v2_ndiff_1 X3 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow ((k7_partfun1 \\
& (u1_struct_0 (k4_real_ns1 X1)) X3 (k4_struct_0 (k4_real_ns1 X0)) = \\
& k4_struct_0 (k4_real_ns1 X1)) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge \\
& ((v1_funct_2 X4 k1_numbers (u1_struct_0 (k4_real_ns1 X0)) \wedge \\
& (v2_ndiff_3 X4 (k4_real_ns1 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k1_numbers (u1_struct_0 (k4_real_ns1 X0)))))) \Rightarrow \\
& ((v1_funct_1 (k1_partfun1 k1_numbers (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 \\
& X1)) (k6_vfunct_1 k1_numbers (k4_real_ns1 X0) X4 X2) X3)) \wedge ((v1_ndiff_3 \\
& (k1_partfun1 k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)) (k6_vfunct_1 \\
& k1_numbers (k4_real_ns1 X0) X4 X2) X3) (k4_real_ns1 X1)) \wedge (m1_subset_1 \\
& (k1_partfun1 k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)) (k6_vfunct_1 \\
& k1_numbers (k4_real_ns1 X0) X4 X2) X3) (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (u1_struct_0 (k4_real_ns1 X1)))))))))) \\
& (2)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_ndiff_3 X2 (k4_real_ns1 X0)) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1))) \wedge \\
& ((v13_vectsp_1 X3 (k4_real_ns1 X0) (k4_real_ns1 X1)) \wedge ((v1_lopban_1 \\
& X3 (k4_real_ns1 X0) (k4_real_ns1 X1)) \wedge ((v2_lopban_1 X3 (k4_real_ns1 \\
& X0) (k4_real_ns1 X1)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow \\
& ((v1_funct_1 (k1_partfun1 k1_numbers (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 \\
& X1)) X2 X3) \wedge ((v1_ndiff_3 (k1_partfun1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X1)) X2 X3) (k4_real_ns1 X1)) \wedge (m1_subset_1 (k1_partfun1 \\
& k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X1)) X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (u1_struct_0 (k4_real_ns1 X1))))))))) \Rightarrow
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\
& X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{5}$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge \\
& ((v13_algstr_0 (k4_real_ns1 X0)) \wedge ((v2_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v3_rlvect_1 (k4_real_ns1 X0)) \wedge ((v4_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v5_rlvect_1 (k4_real_ns1 X0)) \wedge ((v6_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v7_rlvect_1 (k4_real_ns1 X0)) \wedge ((v8_rlvect_1 (k4_real_ns1 \\
& X0)) \wedge ((v3_normsp_0 (k4_real_ns1 X0)) \wedge ((v4_normsp_0 (k4_real_ns1 \\
& X0)) \wedge ((v1_normsp_1 (k4_real_ns1 X0)) \wedge (v2_normsp_1 (k4_real_ns1 \\
& X0))))))))) \Rightarrow
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X0)) \Rightarrow ((\neg v2_struct_0 \\
& (k4_real_ns1 X0)) \wedge ((\neg v7_struct_0 (k4_real_ns1 X0)) \wedge (v1_normsp_1 \\
& (k4_real_ns1 X0))))
\end{aligned} \tag{8}$$

Assume the following.

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

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (10)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow ((\neg v2_struct_0 \ (k4_real_ns1 \ X0)) \wedge ((v1_normsp_1 \ (k4_real_ns1 \ X0)) \wedge (l1_normsp_1 \ (k4_real_ns1 \ X0)))) \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k4_ordinal1) \Rightarrow (v7_ordinal1 \ X0) \quad (12)$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_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 ((v1_ndiff_3 X2 (k4_real_ns1 X0)) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)))))) \Rightarrow ((k7_partfun1 (u1_struct_0 (k4_real_ns1 \\
& X0)) X2 k6_numbers = k4_struct_0 (k4_real_ns1 X0)) \Rightarrow (\forall X3. \\
& ((v1_funct_1 X3) \wedge ((v2_ndiff_1 X3 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow ((k7_partfun1 \\
& (u1_struct_0 (k4_real_ns1 X1)) X3 (k4_struct_0 (k4_real_ns1 X0)) = \\
& k4_struct_0 (k4_real_ns1 X1)) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge \\
& ((v1_funct_2 X4 k1_numbers (u1_struct_0 (k4_real_ns1 X0))) \wedge (\\
& (v2_ndiff_3 X4 (k4_real_ns1 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k1_numbers (u1_struct_0 (k4_real_ns1 X0)))))) \Rightarrow \\
& (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X1))) \wedge ((v13_vectsp_1 X5 (k4_real_ns1 \\
& X0) (k4_real_ns1 X1)) \wedge ((v1_lopan_1 X5 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1)) \wedge ((v2_lopan_1 X5 (k4_real_ns1 X0) (k4_real_ns1 X1)) \wedge (m1_subset_1 \\
& X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k4_real_ns1 X0)) (\\
& u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow ((v1_funct_1 (k6_vfunct_1 \\
& k1_numbers (k4_real_ns1 X1) (k1_partfun1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X1)) X2 X5) (k1_partfun1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X1)) (k6_vfunct_1 k1_numbers (k4_real_ns1 X0) X4 \\
& X2) X3)) \wedge ((v1_ndiff_3 (k6_vfunct_1 k1_numbers (k4_real_ns1 \\
& X1) (k1_partfun1 k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)) X2 X5) (k1_partfun1 \\
& k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X1)) (k6_vfunct_1 k1_numbers (\\
& k4_real_ns1 X0) X4 X2) X3)) (k4_real_ns1 X1)) \wedge (m1_subset_1 (k6_vfunct_1 \\
& k1_numbers (k4_real_ns1 X1) (k1_partfun1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X1)) X2 X5) (k1_partfun1 k1_numbers (u1_struct_0 \\
& (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 \\
& (k4_real_ns1 X1)) (k6_vfunct_1 k1_numbers (k4_real_ns1 X0) X4 \\
& X2) X3)) (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 (k4_real_ns1 \\
& X1)))))))))
\end{aligned}$$