

t50_ndiff_5

(TMRgknj8rm27AkhPnmfdL97FnxcSwD4D2wz)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v2_prvect_2 : \iota \Rightarrow o$ be given. Let $v1_ndiff_5 : \iota \Rightarrow o$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k14_prvect_2 : \iota \Rightarrow \iota$ be given. Let $k11_prvect_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (3)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_relat_1 X0)) \Rightarrow (\neg v1_xboole_0 (k9_xtuple_0 X0)) \quad (6)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \wedge \\ & ((m1_subset_1 X1 (k4_finseq_1 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 (k14_prvect_2 X0)))))) \Rightarrow ((v1_funct_1 (k4_ndiff_5 X0 X1 X2)) \wedge ((v1_funct_2 (k4_ndiff_5 X0 X1 X2) (u1_struct_0 (k11_prvect_2 X0 X1)) (u1_struct_0 (k14_prvect_2 X0))) \wedge (m1_subset_1 (k4_ndiff_5 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k11_prvect_2 X0 X1)) (u1_struct_0 (k14_prvect_2 X0))))))) \quad (8) \end{aligned}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (m1_subset_1 (k4_finseq_1 X0) (k1_zfmisc_1 k5_numbers)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \wedge ((v1_funct_1 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((v1_funct_1 (k1_partfun1 X0 X1 X2 X3 X4 X5)) \wedge (m1_subset_1 (k1_partfun1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 X0 X3)))) \quad (10) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finseq_1 X0) \wedge ((v2_prvect_2 X0) \wedge (v1_ndiff_5 X0)))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg v7_struct_0 X1) \wedge ((v13_algstr_0 \\
& X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 \\
& X1) \wedge ((v3_normsp_0 X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge \\
& (l1_normsp_1 X1)))))))))) \Rightarrow (\forall X2. \forall X3. ((v1_funct_1 \\
& X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (\\
& k14_prvect_2 X0)) (u1_struct_0 X1)))))) \Rightarrow (\forall X4. (m1_subset_1 \\
& X4 (u1_struct_0 (k14_prvect_2 X0))) \Rightarrow (k6_ndiff_5 X0 X1 X2 X3 X4 = \\
& k3_ndiff_1 (k11_prvect_2 X0 (k5_ndiff_5 X0 X2)) X1 (k1_partfun1 \\
& (u1_struct_0 (k11_prvect_2 X0 (k5_ndiff_5 X0 X2))) (u1_struct_0 \\
& (k14_prvect_2 X0)) (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 \\
& X1) (k4_ndiff_5 X0 (k5_ndiff_5 X0 X2) X4) X3) (k3_funct_2 (u1_struct_0 \\
& (k14_prvect_2 X0)) (u1_struct_0 (k11_prvect_2 X0 (k5_ndiff_5 \\
& X0 X2))) (k3_ndiff_5 X0 (k5_ndiff_5 X0 X2) X4))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finseq_1 X0) \wedge ((v2_prvect_2 X0) \wedge (v1_ndiff_5 X0)))))) \Rightarrow \tag{12} \\
& (\forall X1. (X1 \in k4_finseq_1 X0) \Rightarrow (k5_ndiff_5 X0 X1 = X1))
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_finseq_1 X0) \wedge ((v2_prvect_2 X0) \wedge (v1_ndiff_5 X0)))))) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg v7_struct_0 X1) \wedge ((v13_algstr_0 \\
& X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge \\
& ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 \\
& X1) \wedge ((v3_normsp_0 X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge \\
& (l1_normsp_1 X1)))))))))) \Rightarrow (\forall X2. (m2_subset_1 X2 k5_numbers \\
& (k4_finseq_1 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 (\\
& k14_prvect_2 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\
& (k11_prvect_2 X0 X2)) \Rightarrow (\forall X5. ((v1_funct_1 X5) \wedge (m1_subset_1 \\
& X5 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k14_prvect_2 X0)) \\
& (u1_struct_0 X1)))))) \Rightarrow (\forall X6. ((v1_funct_1 X6) \wedge (m1_subset_1 \\
& X6 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k11_prvect_2 X0 X2)) \\
& (u1_struct_0 X1)))))) \Rightarrow (((k3_funct_2 (u1_struct_0 (k14_prvect_2 \\
& X0)) (u1_struct_0 (k11_prvect_2 X0 X2)) (k3_ndiff_5 X0 X2) X3 = X4) \wedge \\
& (r2_relset_1 (u1_struct_0 (k11_prvect_2 X0 X2)) (u1_struct_0 \\
& X1) X6 (k1_partfun1 (u1_struct_0 (k11_prvect_2 X0 X2)) (u1_struct_0 \\
& (k14_prvect_2 X0)) (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 \\
& X1) (k4_ndiff_5 X0 X2 X3) X5))) \Rightarrow (k3_ndiff_1 (k11_prvect_2 X0 X2) \\
& X1 X6 X4 = k6_ndiff_5 X0 X1 X2 X5 X3))))))
\end{aligned}$$