

t5_ndiff_2 (TMGkcwRQXb-
VuZdC78bWLNVKCKEFFGxYdy7s)

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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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_ndiff_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_nfcont_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $v3_funct_1 : \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k2_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_normsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_real_1 : \iota \Rightarrow \iota$ 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.((\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.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_nfcont_1 X4 X0 X3) \Rightarrow ((r1_tarski \\
& X4 (k1_relset_1 (u1_struct_0 X0) X2)) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 \\
& X1)) \Rightarrow ((\forall X7.((v2_relat_1 X7) \wedge ((v1_funct_1 X7) \wedge ((v1_funct_2 \\
& X7 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 X7 k6_numbers) \wedge (m1_subset_1 \\
& X7 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow (\\
& \forall X8.((v1_funct_1 X8) \wedge ((v3_funct_1 X8) \wedge ((v1_funct_2 X8 \\
& k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 X8 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers (u1_struct_0 X0)))))) \Rightarrow (((k2_relset_1 (u1_struct_0 \\
& X0) X8 = k1_tarski X3) \wedge (r1_tarski (k2_relset_1 (u1_struct_0 X0) \\
& (k2_normsp_1 X0 (k2_ndiff_1 X0 X5 X7) X8)) X4)) \Rightarrow ((v3_normsp_1 (\\
& k1_ndiff_1 X1 (k3_normsp_1 X1 (k8_funct_2 k5_numbers (u1_struct_0 \\
& X1) (u1_struct_0 X0) (k2_normsp_1 X0 (k2_ndiff_1 X0 X5 X7) X8) X2) \\
& (k8_funct_2 k5_numbers (u1_struct_0 X1) (u1_struct_0 X0) X8 X2)) \\
& (k37_valued_1 k5_numbers k1_numbers X7)) X1) \wedge (X6 = k6_normsp_1 \\
& X1 (k1_ndiff_1 X1 (k3_normsp_1 X1 (k8_funct_2 k5_numbers (u1_struct_0 \\
& X1) (u1_struct_0 X0) (k2_normsp_1 X0 (k2_ndiff_1 X0 X5 X7) X8) X2) \\
& (k8_funct_2 k5_numbers (u1_struct_0 X1) (u1_struct_0 X0) X8 X2)) \\
& (k37_valued_1 k5_numbers k1_numbers X7)))))) \Leftrightarrow (\forall X7.(\\
& m1_subset_1 X7 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X7 k6_numbers) \wedge (\\
& \forall X8.(m1_subset_1 X8 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X8 k6_numbers) \wedge \\
& (\forall X9.(m1_subset_1 X9 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X8 (\\
& k18_complex1 X9)) \wedge ((X9 \neq k6_numbers) \wedge ((k3_rlvect_1 X0 (k1_rlvect_1 \\
& X0 X5 X9) X3 \in X4) \wedge (r1_xxreal_0 X7 (k1_normsp_0 X1 (k5_algstr_0 X1 \\
& (k1_rlvect_1 X1 (k5_algstr_0 X1 (k7_partfun1 (u1_struct_0 X1) \\
& X2 (k3_rlvect_1 X0 (k1_rlvect_1 X0 X5 X9) X3)) (k7_partfun1 (u1_struct_0 \\
& X1) X2 X3)) (k2_real_1 X9)) X6))))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v13_algstr_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\
& ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\
& X0) \wedge ((v3_normsp_0 X0) \wedge ((v4_normsp_0 X0) \wedge ((v2_normsp_1 X0) \wedge \\
& (l1_normsp_1 X0)))))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((\neg v7_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\
& v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 \\
& X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v3_normsp_0 X1) \wedge \\
& (v4_normsp_0 X1) \wedge ((v2_normsp_1 X1) \wedge (l1_normsp_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow ((r1_ndiff_2 X0 X1 X2 X3 X4) \Leftrightarrow (\exists X5.(m1_nfcont_1 X5 X0 \\
& X3) \wedge ((r1_tarski X5 (k1_relset_1 (u1_struct_0 X0) X2)) \wedge (\exists X6. \\
& (m1_subset_1 X6 (u1_struct_0 X1)) \wedge (\forall X7.(m1_subset_1 X7 \\
& k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X7 k6_numbers) \wedge (\forall X8.(m1_subset_1 \\
& X8 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X8 k6_numbers) \wedge (\forall X9.(\\
& m1_subset_1 X9 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X8 (k18_complex1 \\
& X9)) \wedge ((X9 \neq k6_numbers) \wedge ((k3_rlvect_1 X0 (k1_rlvect_1 X0 X4 X9) \\
& X3 \in X5) \wedge (r1_xxreal_0 X7 (k1_normsp_0 X1 (k5_algstr_0 X1 (k1_rlvect_1 \\
& X1 (k5_algstr_0 X1 (k7_partfun1 (u1_struct_0 X1) X2 (k3_rlvect_1 \\
& X0 (k1_rlvect_1 X0 X4 X9) X3)) (k7_partfun1 (u1_struct_0 X1) X2 X3)) \\
& (k2_real_1 X9) X6))))))))))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\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.((\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.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow ((r1_ndiff_2 X0 X1 X2 X3 X4) \Leftrightarrow (\exists X5.(m1_nfcont_1 X5 X0 \\
& X3) \wedge ((r1_tarski X5 (k1_relset_1 (u1_struct_0 X0) X2)) \wedge (\exists X6. \\
& (m1_subset_1 X6 (u1_struct_0 X1)) \wedge (\forall X7.((v2_relat_1 X7) \wedge \\
& ((v1_funct_1 X7) \wedge ((v1_funct_2 X7 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 \\
& X7 k6_numbers) \wedge (m1_subset_1 X7 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& k1_numbers)))))) \Rightarrow (\forall X8.((v1_funct_1 X8) \wedge ((v3_funct_1 \\
& X8) \wedge ((v1_funct_2 X8 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 \\
& X8 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow \\
& (((k2_relset_1 (u1_struct_0 X0) X8 = k1_tarski X3) \wedge (r1_tarski \\
& (k2_relset_1 (u1_struct_0 X0) (k2_normsp_1 X0 (k2_ndiff_1 X0 X4 \\
& X7) X8)) X5)) \Rightarrow ((v3_normsp_1 (k1_ndiff_1 X1 (k3_normsp_1 X1 (k8_funct_2 \\
& k5_numbers (u1_struct_0 X1) (u1_struct_0 X0) (k2_normsp_1 X0 (\\
& k2_ndiff_1 X0 X4 X7) X8) X2) (k8_funct_2 k5_numbers (u1_struct_0 \\
& X1) (u1_struct_0 X0) X8 X2)) (k37_valued_1 k5_numbers k1_numbers \\
& X7)) X1) \wedge (X6 = k6_normsp_1 X1 (k1_ndiff_1 X1 (k3_normsp_1 X1 (k8_funct_2 \\
& k5_numbers (u1_struct_0 X1) (u1_struct_0 X0) (k2_normsp_1 X0 (\\
& k2_ndiff_1 X0 X4 X7) X8) X2) (k8_funct_2 k5_numbers (u1_struct_0 \\
& X1) (u1_struct_0 X0) X8 X2)) (k37_valued_1 k5_numbers k1_numbers \\
& X7))))))))))
\end{aligned}$$