

t19_fdifff_3 (TMHky-
cmC8mQ7tXwuZKkHkZhoUNv1SVnVLTT)

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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 $k1_numbers : \iota$ be given. Let $r3_fdiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k3_rfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_square_1 : \iota \Rightarrow \iota$ be given. Let $r2_fdiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ 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 $v1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow \\
 & (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\neg(r2_fdiff_3 X0 X1) \wedge \\
 & ((k1_seq_1 X0 X1 \neq X2) \wedge ((\exists X3.(m1_subset_1 X3 k1_numbers) \wedge \\
 & ((\neg r1_xxreal_0 X3 k6_numbers) \wedge (r1_tarski (k1_rcomp_1 X1 (k7_real_1 \\
 & X1 X3)) (k1_relset_1 k1_numbers X0)))) \wedge (\forall X3.(m1_subset_1 \\
 & X3 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X3 k6_numbers) \wedge ((r1_tarski (\\
 & k1_rcomp_1 X1 (k7_real_1 X1 X3)) (k1_relset_1 k1_numbers X0)) \wedge \\
 & (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (\neg(X4 \in k1_rcomp_1 X1 \\
 & (k7_real_1 X1 X3)) \wedge (k1_seq_1 X0 X4 = X2))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow \\ ((r3_fdiff_3 X0 X1) \Rightarrow (r2_fdiff_3 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 k1_numbers) \Rightarrow (((r3_fdiff_3 X0 X2) \wedge (r3_fdiff_3 \\ X1 X2)) \Rightarrow ((\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 \\ X3 k6_numbers) \wedge (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (\neg(X4 \in \\ k1_rset_1 k1_numbers X1) \wedge ((X4 \in k1_rcomp_1 X2 (k7_real_1 X2 X3)) \wedge \\ (k1_seq_1 X1 X4 = k6_numbers)))))) \vee ((r3_fdiff_3 (k3_rfunct_1 \\ k1_numbers k1_numbers X0 X1) X2) \wedge (k2_fdiff_3 X2 (k3_rfunct_1 k1_numbers \\ k1_numbers X0 X1) = k10_real_1 (k9_real_1 (k8_real_1 (k2_fdiff_3 \\ X2 X0) (k1_seq_1 X1 X2)) (k8_real_1 (k2_fdiff_3 X2 X1) (k1_seq_1 \\ X0 X2))) (k5_square_1 (k1_seq_1 X1 X2)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 \\ X0))) \Rightarrow (m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow \\ ((r3_fdiff_3 X0 X1) \Leftrightarrow ((\exists X2.(m1_subset_1 X2 k1_numbers) \wedge \\ (\neg r1_xxreal_0 X2 k6_numbers) \wedge (r1_tarski (k1_rcomp_1 X1 (k7_real_1 \\ X1 X2)) (k1_rset_1 k1_numbers X0)))) \wedge (\forall X2.((v2_relat_1 \\ X2) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge \\ ((v1_fdiff_1 X2 k6_numbers) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ k5_numbers k1_numbers)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ ((v3_funct_1 X3) \wedge ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\ (k2_rset_1 k1_numbers X3 = k1_tarski X1) \wedge ((r1_tarski (k2_rset_1 \\ k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers X2 X3)) \\ (k1_rset_1 k1_numbers X0)) \wedge (\forall X4.(m2_subset_1 X4 k1_numbers \\ k5_numbers) \Rightarrow (\neg r1_xxreal_0 (k1_seq_1 X2 X4) k6_numbers)))) \Rightarrow (\\ v2_comseq_2 (k20_valued_1 k5_numbers k1_numbers k1_numbers (\\ k37_valued_1 k5_numbers k1_numbers X2) (k47_valued_1 k5_numbers \\ k1_numbers k1_numbers (k8_funct_2 k5_numbers k1_numbers k1_numbers \\ (k3_valued_1 k5_numbers k1_numbers k1_numbers X2 X3) X0) (k8_funct_2 \\ k5_numbers k1_numbers k1_numbers X3 X0)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v5_relat_1 X0 k1_numbers)) \Rightarrow ((v1_relat_1 X0) \wedge (v3_valued_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 k1_numbers) \Rightarrow (((r3_fdiff_3 X0 X2) \wedge (r3_fdiff_3 X1 X2)) \Rightarrow ((k1_seq_1 X1 X2 = k6_numbers) \vee ((r3_fdiff_3 (k3_rfunct_1 k1_numbers k1_numbers X0 X1) X2) \wedge (k2_fdiff_3 X2 (k3_rfunct_1 k1_numbers k1_numbers X0 X1) = k10_real_1 (k9_real_1 (k8_real_1 (k2_fdiff_3 X2 X0) (k1_seq_1 X1 X2)) (k8_real_1 (k2_fdiff_3 X2 X1) (k1_seq_1 X0 X2))) (k5_square_1 (k1_seq_1 X1 X2)))))))) \end{aligned}$$