

t10_pdiff_3

(TMJx2x3L3qCJ7uxo2omQU241GonxWeBUZ3c)

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Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ 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 $r2_pdiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_fdiff_1 : \iota \Rightarrow o$ be given. Let $v2_fdiff_1 : \iota \Rightarrow o$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & \quad (k1_euclid np_2) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
 & \quad k1_numbers (k1_euclid np_2)) \Rightarrow ((r3_pdiff_1 np_2 np_2 X0 X1) \Leftrightarrow \\
 & \quad (\exists X2.(m1_subset_1 X2 k1_numbers) \wedge (\exists X3.(m1_subset_1 \\
 & \quad X3 k1_numbers) \wedge ((X1 = k10_finseq_1 X2 X3) \wedge (\exists X4.(m1_rcomp_1 \\
 & \quad X4 X3) \wedge ((r1_tarski X4 (k1_relset_1 k1_numbers (k1_pdiff_2 np_2 \\
 & \quad np_2 X0 X1)))) \wedge (\exists X5.((v1_funct_1 X5) \wedge ((v3_fdiff_1 X5) \wedge \\
 & \quad (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge \\
 & \quad (\exists X6.((v1_funct_1 X6) \wedge ((v2_fdiff_1 X6) \wedge (m1_subset_1 \\
 & \quad X6 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\forall X7. \\
 & \quad (m1_subset_1 X7 k1_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9_real_1 (k1_seq_1 (\\
 & \quad k1_pdiff_2 np_2 np_2 X0 X1) X7) (k1_seq_1 (k1_pdiff_2 np_2 np_2 \\
 & \quad X0 X1) X3) = k7_real_1 (k1_seq_1 X5 (k9_real_1 X7 X3)) (k1_seq_1 X6 \\
 & \quad (k9_real_1 X7 X3)))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
 & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers))
 \end{aligned} \tag{2}$$

Assume the following.

$$\neg v1_xboole_0 \ np_2 \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 \ X0 \ k5_numbers) \wedge \\ & (((\neg v1_xboole_0 \ X1) \wedge (m1_subset_1 \ X1 \ k5_numbers)) \wedge ((v1_funct_1 \\ & \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k1_euclid \ X1) \\ & k1_numbers)))))) \Rightarrow ((v1_funct_1 \ (k1_pdiff_3 \ X0 \ X1 \ X2)) \wedge ((v1_funct_2 \\ & (k1_pdiff_3 \ X0 \ X1 \ X2) \ (k1_euclid \ X1) \ k1_numbers) \wedge (m1_subset_1 \\ & (k1_pdiff_3 \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k1_euclid \ X1) \\ & k1_numbers)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 \ X0) \wedge (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & (k1_euclid \ np_2) \ k1_numbers)))) \Rightarrow (\forall X1. (m2_finseq_2 \ X1 \\ & k1_numbers \ (k1_euclid \ np_2)) \Rightarrow ((r2_pdiff_3 \ X0 \ X1) \Leftrightarrow (\exists X2. \\ & (m1_subset_1 \ X2 \ k1_numbers) \wedge (\exists X3. (m1_subset_1 \ X3 \ k1_numbers) \wedge \\ & ((X1 = k10_finseq_1 \ X2 \ X3) \wedge (\exists X4. (m1_rcomp_1 \ X4 \ X3) \wedge ((r1_tarski \\ & X4 \ (k1_relset_1 \ k1_numbers \ (k1_pdiff_2 \ np_2 \ np_2 \ (k1_pdiff_3 \\ & np_1 \ np_2 \ X0) \ X1)))) \wedge (\exists X5. ((v1_funct_1 \ X5) \wedge ((v3_fdiff_1 \\ & X5) \wedge (m1_subset_1 \ X5 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))))) \wedge \\ & (\exists X6. ((v1_funct_1 \ X6) \wedge ((v2_fdiff_1 \ X6) \wedge (m1_subset_1 \\ & X6 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))))) \wedge (\forall X7. \\ & (m1_subset_1 \ X7 \ k1_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9_real_1 \ (k1_seq_1 \ (\\ & k1_pdiff_2 \ np_2 \ np_2 \ (k1_pdiff_3 \ np_1 \ np_2 \ X0) \ X1) \ X7) \ (k1_seq_1 \\ & (k1_pdiff_2 \ np_2 \ np_2 \ (k1_pdiff_3 \ np_1 \ np_2 \ X0) \ X1) \ X3) = k7_real_1 \\ & (k1_seq_1 \ X5 \ (k9_real_1 \ X7 \ X3)) \ (k1_seq_1 \ X6 \ (k9_real_1 \ X7 \ X3)))))))))) \end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned} & \forall X0. (m2_finseq_2 \ X0 \ k1_numbers \ (k1_euclid \ np_2)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (\\ & k1_euclid \ np_2) \ k1_numbers)))) \Rightarrow ((r2_pdiff_3 \ X1 \ X0) \Leftrightarrow (r3_pdiff_1 \\ & np_2 \ np_2 \ (k1_pdiff_3 \ np_1 \ np_2 \ X1) \ X0)) \end{aligned}$$