

t41_pdiff_5

(TMSrZ68HJr1WidJws27VuptGSDaHEZQJnMe)

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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 $k1_euclid : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $r5_pdiff_5 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k8_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_pdiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ 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 $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k1_euclid np_3) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
& \quad k1_numbers (k1_euclid np_3)) \Rightarrow ((\exists X2.(m1_subset_1 X2 k1_numbers) \wedge \\
& \quad (\exists X3.(m1_subset_1 X3 k1_numbers) \wedge (\exists X4.(m1_subset_1 \\
& \quad X4 k1_numbers) \wedge ((X1 = k11_finseq_1 X2 X3 X4) \wedge (r1_fdiff_1 (k1_pdiff_2 \\
& \quad np_3 np_2 X0 X1) X3)))))) \Leftrightarrow (r3_pdiff_1 np_3 np_2 X0 X1))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
& (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
& v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
& np_3) k1_numbers)))) \Rightarrow (((X3 = k11_finseq_1 X0 X1 X2) \wedge (r5_pdiff_5 \\
& X4 X3)) \Rightarrow (r1_diff_1 (k1_pdiff_2 np_3 np_2 (k1_pdiff_3 np_2 \\
& np_3 X4) X3) X1))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v2_relat_1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& ((v1_diff_1 X1 k6_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v3_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
& k2_reset_1 k1_numbers X2 = k1_tarski X0) \Rightarrow ((v2_comseq_2 X2) \wedge (\\
& (k2_seq_2 X2 = X0) \wedge ((v2_comseq_2 (k3_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X2)) \wedge (k2_seq_2 (k3_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X2) = X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& (k1_reset_1 (k1_euclid np_3) (k1_pdiff_1 np_2 np_3) = k1_euclid \\
& np_3) \wedge ((k1_rvsum_1 (k1_pdiff_1 np_2 np_3) = k1_numbers) \wedge (\\
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (k1_seq_1 \\
& (k1_pdiff_1 np_2 np_3) (k11_finseq_1 X0 X1 X2) = X1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2_finseq_2 X0 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X1. \\
& ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\
& k1_euclid np_3) k1_numbers)))) \Rightarrow ((r5_pdiff_5 X1 X0) \Leftrightarrow (r3_pdiff_1 \\
& np_3 np_2 (k1_pdiff_3 np_2 np_3 X1) X0))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
& (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
& v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
& np_3) k1_numbers)))) \Rightarrow (((X3 = k11_finseq_1 X0 X1 X2) \wedge (r5_pdiff_5 \\
& X4 X3)) \Rightarrow (k5_pdiff_5 X4 X3 = k1_diff_1 (k1_pdiff_2 np_3 np_2 (\\
& k1_pdiff_3 np_2 np_3 X4) X3) X1))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\
& \quad (m1_rcomp_1 X2 X1) \Rightarrow (((r1_fdiff_1 X0 X1) \wedge (r1_tarski X2 (k1_relset_1 \\
& \quad \quad k1_numbers X0))) \Rightarrow (\forall X3.((v2_relat_1 X3) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 X3 k6_numbers) \wedge \\
& \quad (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1 X4) \wedge ((v3_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 k5_numbers k1_numbers) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k5_numbers k1_numbers)))))) \Rightarrow (((k2_relset_1 k1_numbers X4 = k1_tarski \\
& \quad X1) \wedge (r1_tarski (k2_relset_1 k1_numbers (k3_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers X3 X4)) X2) \Rightarrow ((v2_comseq_2 (k20_valued_1 \\
& k5_numbers k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers \\
& \quad X3) (k47_valued_1 k5_numbers k1_numbers k1_numbers (k8_funct_2 \\
& k5_numbers k1_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers \\
& \quad k1_numbers X3 X4) X0) (k8_funct_2 k5_numbers k1_numbers k1_numbers \\
& \quad X4 X0))) \wedge (k1_fdiff_1 X0 X1 = k2_seq_2 (k20_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers X3) \\
& \quad (k47_valued_1 k5_numbers k1_numbers k1_numbers (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers \\
& \quad X3 X4) X0) (k8_funct_2 k5_numbers k1_numbers k1_numbers X4 X0)))))))))) \Rightarrow \\
& \quad (7)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \quad (8)
\end{aligned}$$

Assume the following.

$$-v1_xboole_0 np_3 \quad (9)$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \quad (10)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\
& \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (11)
\end{aligned}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (12)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X0 k5_numbers) \wedge \\ & (((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 k5_numbers) \wedge ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \Rightarrow ((v1_funct_1 (k1_pdiff_3 X0 X1 X2)) \wedge ((v1_funct_2 \\ & (k1_pdiff_3 X0 X1 X2) (k1_euclid X1) k1_numbers) \wedge (m1_subset_1 \\ & (k1_pdiff_3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X0 \\ & k5_numbers) \wedge ((m1_subset_1 X1 k5_numbers) \wedge ((v1_funct_1 X2) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X0) k1_numbers)))) \wedge \\ & (m1_subset_1 X3 (k1_euclid X0)))) \Rightarrow ((v1_funct_1 (k1_pdiff_2 \\ & X0 X1 X2 X3)) \wedge (m1_subset_1 (k1_pdiff_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (m1_finseq_2 (k1_euclid X0) k1_numbers) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k1_euclid np_3) k1_numbers)))) \Rightarrow (\forall X1. (m2_finseq_2 X1 \\ & k1_numbers (k1_euclid np_3)) \Rightarrow ((r5_pdiff_5 X0 X1) \Leftrightarrow (\exists X2. \\ & (m1_subset_1 X2 k1_numbers) \wedge (\exists X3. (m1_subset_1 X3 k1_numbers) \wedge \\ & (\exists X4. (m1_subset_1 X4 k1_numbers) \wedge ((X1 = k11_finseq_1 X2 \\ & X3 X4) \wedge (\exists X5. (m1_rcomp_1 X5 X3) \wedge ((r1_tarski X5 (k1_relset_1 \\ & k1_numbers (k1_pdiff_2 np_3 np_2 (k1_pdiff_3 np_2 np_3 X0) \\ & X1)))) \wedge (\exists X6. ((v1_funct_1 X6) \wedge ((v3_fdiff_1 X6) \wedge (m1_subset_1 \\ & X6 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\exists X7. \\ & ((v1_funct_1 X7) \wedge ((v2_fdiff_1 X7) \wedge (m1_subset_1 X7 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\forall X8. (m1_subset_1 \\ & X8 k1_numbers) \Rightarrow ((X8 \in X5) \Rightarrow (k9_real_1 (k1_seq_1 (k1_pdiff_2 np_3 \\ & np_2 (k1_pdiff_3 np_2 np_3 X0) X1) X8) (k1_seq_1 (k1_pdiff_2 \\ & np_3 np_2 (k1_pdiff_3 np_2 np_3 X0) X1) X3) = k7_real_1 (k1_seq_1 \\ & X6 (k9_real_1 X8 X3)) (k1_seq_1 X7 (k9_real_1 X8 X3)))))))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (19)$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k1_euclid\ np_3) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
& \quad k1_numbers (k1_euclid\ np_3)) \Rightarrow (\forall X2.(m1_rcomp_1 X2 (k1_seq_1 \\
& \quad (k1_pdiff_1\ np_2\ np_3) X1)) \Rightarrow (((r5_pdiff_5 X0 X1) \wedge (r1_tarski \\
& \quad X2 (k1_relset_1 k1_numbers (k1_pdiff_2\ np_3\ np_2 (k1_pdiff_3 \\
& \quad np_2\ np_3 X0) X1)))) \Rightarrow (\forall X3.((v2_relat_1 X3) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 X3 k6_numbers) \wedge \\
& (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1 X4) \wedge ((v3_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 k5_numbers k1_numbers) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))))) \Rightarrow (((k2_relset_1 k1_numbers X4 = k1_tarski \\
& \quad (k1_seq_1 (k1_pdiff_1\ np_2\ np_3) X1)) \wedge (r1_tarski (k2_relset_1 \\
& k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers X3 X4)) \\
& X2)) \Rightarrow ((v2_comseq_2 (k20_valued_1 k5_numbers k1_numbers k1_numbers \\
& \quad (k37_valued_1 k5_numbers k1_numbers X3) (k47_valued_1 k5_numbers \\
& k1_numbers k1_numbers (k8_funct_2 k5_numbers k1_numbers k1_numbers \\
& \quad (k3_valued_1 k5_numbers k1_numbers k1_numbers X3 X4) (k1_pdiff_2 \\
& \quad np_3\ np_2 (k1_pdiff_3\ np_2\ np_3 X0) X1)) (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers X4 (k1_pdiff_2\ np_3\ np_2 (k1_pdiff_3\ np_2 \\
& \quad np_3 X0) X1)))))) \wedge (k5_pdiff_5 X0 X1 = k2_seq_2 (k20_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers X3) \\
& \quad (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 \\
& \quad X3 X4) (k1_pdiff_2\ np_3\ np_2 (k1_pdiff_3\ np_2\ np_3 X0) X1)) (\\
& \quad k8_funct_2 k5_numbers k1_numbers k1_numbers X4 (k1_pdiff_2\ np_3 \\
& \quad np_2 (k1_pdiff_3\ np_2\ np_3 X0) X1)))))))))
\end{aligned}$$