

t37_pdiff_5
(TMbQ5hUUDi38WBD6ier1opbedLsdqJCd3PJ)

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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 $np_1 : \iota$ be given. Let $r1_pdiff_5 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_seq_2 : \iota \Rightarrow \iota$ 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.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v2_relat_1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& ((v1_fdiff_1 X1 k6_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
& ((v3_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
& k2_relset_1 k1_numbers X2 = k1_tarski X0) \Rightarrow ((v2_comseq_2 X2) \wedge (\\
& (k2_seq_2 X2 = X0) \wedge ((v2_comseq_2 (k3_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X2)) \wedge (k2_seq_2 (k3_valued_1 k5_numbers k1_numbers \\
& k1_numbers X1 X2) = X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
& (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
& v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
& np_3) k1_numbers)))) \Rightarrow (((X3 = k11_finseq_1 X0 X1 X2) \wedge (r1_pdiff_5 \\
& X4 X3)) \Rightarrow (r1_fdiff_1 (k1_pdiff_2 np_3 np_1 (k1_pdiff_3 np_1 \\
& np_3 X4) X3) X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& (k1_relset_1 (k1_euclid np_3) (k1_pdiff_1 np_1 np_3) = k1_euclid \\
& np_3) \wedge ((k1_rvsum_1 (k1_pdiff_1 np_1 np_3) = k1_numbers) \wedge (\\
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (k1_seq_1 \\
& (k1_pdiff_1 np_1 np_3) (k11_finseq_1 X0 X1 X2) = X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k1_numbers k1_numbers)))) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\
& \quad (m1_rcomp_1 X2 X1) \Rightarrow (((r1_fdiff_1 X0 X1) \wedge (r1_tarski X2 (k1_relset_1 \\
& \quad \quad k1_numbers X0))) \Rightarrow (\forall X3.((v2_relat_1 X3) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 X3 k6_numbers) \wedge \\
& \quad (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers))))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1 X4) \wedge ((v3_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 k5_numbers k1_numbers) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k5_numbers k1_numbers)))))) \Rightarrow (((k2_relset_1 k1_numbers X4 = k1_tarski \\
& \quad X1) \wedge (r1_tarski (k2_relset_1 k1_numbers (k3_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers X3 X4)) X2) \Rightarrow ((v2_comseq_2 (k20_valued_1 \\
& \quad k5_numbers k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers \\
& \quad X3) (k47_valued_1 k5_numbers k1_numbers k1_numbers (k8_funct_2 \\
& \quad k5_numbers k1_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers \\
& \quad k1_numbers X3 X4) X0) (k8_funct_2 k5_numbers k1_numbers k1_numbers \\
& \quad X4 X0)))) \wedge (k1_fdiff_1 X0 X1 = k2_seq_2 (k20_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers X3) \\
& \quad (k47_valued_1 k5_numbers k1_numbers k1_numbers (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers \\
& \quad X3 X4) X0) (k8_funct_2 k5_numbers k1_numbers k1_numbers X4 X0))))))))) \Rightarrow \\
& \quad (4)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& \quad X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
& \quad (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
& v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
& \quad np_3) k1_numbers)))) \Rightarrow (((X3 = k11_finseq_1 X0 X1 X2) \wedge (r1_pdfiff_5 \\
& \quad X4 X3)) \Rightarrow (k1_pdfiff_5 X4 X3 = k1_fdiff_1 (k1_pdfiff_2 np_3 np_1 (\\
& \quad k1_pdfiff_3 np_1 np_3 X4) X3) X0)))))) \Rightarrow \\
& \quad (5)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \Rightarrow \\
& \quad (6)
\end{aligned}$$

Assume the following.

$$\neg v1_xboole_0 np_3 \quad (7)$$

Assume the following.

$$\begin{aligned}
& ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\
& ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \Rightarrow \\
& \quad (8)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\
& \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \Rightarrow \\
& \quad (9)
\end{aligned}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (10)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (k2_seq_2 X0 = k1_seq_2 X0) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (m1_subset_1 (k2_seq_2 X0) k1_numbers) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (v1_xreal_0 (k1_seq_2 X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X0 k5_numbers) \wedge \\ & (((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 k5_numbers) \wedge ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \Rightarrow ((v1_funct_1 (k1_pdiff_3 X0 X1 X2) \wedge ((v1_funct_2 \\ & (k1_pdiff_3 X0 X1 X2) (k1_euclid X1) k1_numbers) \wedge (m1_subset_1 \\ & (k1_pdiff_3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X0 \\ & k5_numbers) \wedge ((m1_subset_1 X1 k5_numbers) \wedge ((v1_funct_1 X2) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X0) k1_numbers)))))) \wedge \\ & (m1_subset_1 X3 (k1_euclid X0)))) \Rightarrow ((v1_funct_1 (k1_pdiff_2 \\ & X0 X1 X2 X3) \wedge (m1_subset_1 (k1_pdiff_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (m1_finseq_2 (k1_euclid X0) k1_numbers) \quad (17)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k1_euclid\ np_3) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
& \quad k1_numbers (k1_euclid\ np_3)) \Rightarrow ((r1_pdiff_5 X0 X1) \Leftrightarrow (\exists X2. \\
& (m1_subset_1 X2 k1_numbers) \wedge (\exists X3.(m1_subset_1 X3 k1_numbers) \wedge \\
& \quad (\exists X4.(m1_subset_1 X4 k1_numbers) \wedge ((X1 = k11_finseq_1 X2 \\
& \quad X3 X4) \wedge (\exists X5.(m1_rcomp_1 X5 X2) \wedge ((r1_tarski X5 (k1_relset_1 \\
& \quad k1_numbers (k1_pdiff_2\ np_3\ np_1) (k1_pdiff_3\ np_1\ np_3 X0) \\
& \quad X1)))) \wedge (\exists X6.((v1_funct_1 X6) \wedge ((v3_fdiff_1 X6) \wedge (m1_subset_1 \\
& \quad X6 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\exists X7. \\
& ((v1_funct_1 X7) \wedge ((v2_fdiff_1 X7) \wedge (m1_subset_1 X7 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\forall X8.(m1_subset_1 \\
& X8 k1_numbers) \Rightarrow ((X8 \in X5) \Rightarrow (k9_real_1 (k1_seq_1 (k1_pdiff_2\ np_3 \\
& \quad np_1) (k1_pdiff_3\ np_1\ np_3 X0) X1) X8) (k1_seq_1 (k1_pdiff_2 \\
& \quad np_3\ np_1) (k1_pdiff_3\ np_1\ np_3 X0) X1) X2) = k7_real_1 (k1_seq_1 \\
& \quad X6 (k9_real_1 X8 X2)) (k1_seq_1 X7 (k9_real_1 X8 X2))))))))))))) \\
& \hspace{20em} (18)
\end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (19)$$

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_1\ np_3) X1)) \Rightarrow (((r1_pdiff_5 X0 X1) \wedge (r1_tarski \\
& \quad X2 (k1_relset_1 k1_numbers (k1_pdiff_2\ np_3\ np_1) (k1_pdiff_3 \\
& \quad np_1\ 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_1\ 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_1) (k1_pdiff_3\ np_1\ np_3 X0) X1)) (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers X4 (k1_pdiff_2\ np_3\ np_1) (k1_pdiff_3\ np_1 \\
& \quad np_3 X0) X1)))) \wedge (k1_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_1) (k1_pdiff_3\ np_1\ np_3 X0) X1)) (\\
& \quad k8_funct_2 k5_numbers k1_numbers k1_numbers X4 (k1_pdiff_2\ np_3 \\
& \quad np_1) (k1_pdiff_3\ np_1\ np_3 X0) X1)))))))))
\end{aligned}$$