

t22_pdiff_5

(TMH2FsDtqpYRSmYD84Bbq92W5Vj47i1y2gN)

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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 $np_3 : \iota$ 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 $r4_pdiff_5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_pdiff_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & \quad (k1_euclid np_3) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
 & \quad k1_numbers (k1_euclid np_3)) \Rightarrow ((r3_pdiff_1 np_3 np_1 X0 X1) \Leftrightarrow \\
 & \quad (\exists X2.(m1_subset_1 X2 k1_numbers) \wedge (\exists X3.(m1_subset_1 \\
 & \quad X3 k1_numbers) \wedge (\exists X4.(m1_subset_1 X4 k1_numbers) \wedge ((X1 = \\
 & \quad k11_finseq_1 X2 X3 X4) \wedge (\exists X5.(m1_rcomp_1 X5 X2) \wedge ((r1_tarski \\
 & \quad X5 (k1_relset_1 k1_numbers (k1_pdiff_2 np_3 np_1 X0 X1))) \wedge (\exists X6. \\
 & \quad ((v1_funct_1 X6) \wedge ((v3_fdiff_1 X6) \wedge (m1_subset_1 X6 (k1_zfmisc_1 \\
 & \quad (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\exists X7.((v1_funct_1 \\
 & \quad X7) \wedge ((v2_fdiff_1 X7) \wedge (m1_subset_1 X7 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & \quad k1_numbers k1_numbers)))))) \wedge (\forall X8.(m1_subset_1 X8 k1_numbers) \Rightarrow \\
 & \quad ((X8 \in X5) \Rightarrow (k9_real_1 (k1_seq_1 (k1_pdiff_2 np_3 np_1 X0 X1) X8) \\
 & \quad (k1_seq_1 (k1_pdiff_2 np_3 np_1 X0 X1) X2) = k7_real_1 (k1_seq_1 \\
 & \quad X6 (k9_real_1 X8 X2)) (k1_seq_1 X7 (k9_real_1 X8 X2)))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\
 & ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers))
 \end{aligned} \tag{2}$$

Assume the following.

$$\neg v1_xboole_0 \text{ np_3} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \text{ np_2}) \wedge (m2_subset_1 \text{ np_2 } k1_numbers \text{ k5_numbers})) \wedge \\ & ((m1_subset_1 \text{ np_2 } k5_numbers) \wedge (m1_subset_1 \text{ np_2 } k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k1_euclid \text{ np_3}) k1_numbers)))) \Rightarrow (\forall X1. (m2_finseq_2 X1 \\ & k1_numbers (k1_euclid \text{ np_3})) \Rightarrow ((r4_pdiff_5 X0 X1) \Leftrightarrow (\exists X2. \\ & (m1_subset_1 X2 k1_numbers) \wedge (\exists X3. (m1_subset_1 X3 k1_numbers) \wedge \\ & (\exists X4. (m1_subset_1 X4 k1_numbers) \wedge ((X1 = k11_finseq_1 X2 \\ & X3 X4) \wedge (\exists X5. (m1_rcomp_1 X5 X2) \wedge ((r1_tarski X5 (k1_relset_1 \\ & k1_numbers (k1_pdiff_2 \text{ np_3 } \text{ np_1}) (k1_pdiff_3 \text{ np_2 } \text{ np_3 } X0) \\ & X1)))) \wedge (\exists X6. ((v1_funct_1 X6) \wedge ((v3_fdiff_1 X6) \wedge (m1_subset_1 \\ & X6 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\exists X7. \\ & ((v1_funct_1 X7) \wedge ((v2_fdiff_1 X7) \wedge (m1_subset_1 X7 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\forall X8. (m1_subset_1 \\ & X8 k1_numbers) \Rightarrow ((X8 \in X5) \Rightarrow (k9_real_1 (k1_seq_1 (k1_pdiff_2 \text{ np_3 } \\ & \text{ np_1}) (k1_pdiff_3 \text{ np_2 } \text{ np_3 } X0) X1) X8) (k1_seq_1 (k1_pdiff_2 \\ & \text{ np_3 } \text{ np_1}) (k1_pdiff_3 \text{ np_2 } \text{ np_3 } X0) X1) X2) = k7_real_1 (k1_seq_1 \\ & X6 (k9_real_1 X8 X2)) (k1_seq_1 X7 (k9_real_1 X8 X2)))))))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m2_finseq_2 X0 k1_numbers (k1_euclid \text{ np_3})) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\ & k1_euclid \text{ np_3}) k1_numbers)))) \Rightarrow ((r4_pdiff_5 X1 X0) \Leftrightarrow (r3_pdiff_1 \\ & \text{ np_3 } \text{ np_1} (k1_pdiff_3 \text{ np_2 } \text{ np_3 } X1) X0))) \end{aligned}$$