

t12_pdiff_4 (TMH-
pBN7kFsaWkxP1264ihXPcJYGkndQnbtR)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k5_numbers : \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (k11_finseq_1 X0 X1 X2 = k11_finseq_1 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge \\ & \quad (X2 = X5))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\ & \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X0 \\ & k5_numbers)\wedge((m1_subset_1 X1 k5_numbers)\wedge(((v1_funct_1 X2)\wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X0) k1_numbers))))\wedge \\ & (m1_subset_1 X3 (k1_euclid X0))))\Rightarrow((v1_funct_1 (k1_pdiff_2 \\ & X0 X1 X2 X3))\wedge(m1_subset_1 (k1_pdiff_2 X0 X1 X2 X3) (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(m1_finseq_2 (k1_euclid X0) k1_numbers) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((v1_funct_1 X0)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers))))\Rightarrow(\forall X1.(v1_xreal_0 X1)\Rightarrow((r1_fdiff_1 \\ & X0 X1)\Leftrightarrow(\exists X2.(m1_rcomp_1 X2 X1)\wedge((r1_tarski X2 (k1_relset_1 \\ & k1_numbers X0))\wedge(\exists X3.((v1_funct_1 X3)\wedge((v3_fdiff_1 X3)\wedge \\ & (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))))\wedge \\ & (\exists X4.((v1_funct_1 X4)\wedge((v2_fdiff_1 X4)\wedge(m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))))\wedge(\forall X5. \\ & (m1_subset_1 X5 k1_numbers)\Rightarrow((X5 \in X2)\Rightarrow(k9_real_1 (k1_seq_1 X0 \\ & X5) (k1_seq_1 X0 X1) = k7_real_1 (k1_seq_1 X3 (k9_real_1 X5 X1)) (\\ & k1_seq_1 X4 (k9_real_1 X5 X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (10)$$

Theorem 1

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