

t35_pdiff_5

(TMMpg6ZdAAdWea4VsMw7EhoyX5MvReXN12T)

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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 $r8_pdiff_5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_pdiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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. 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 $v3_fdiff_1 : \iota \Rightarrow o$ 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 $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
 & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
 & (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
 & v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
 & np_3) k1_numbers)))) \Rightarrow ((X3 = k11_finseq_1 X0 X1 X2) \Rightarrow (k11_pdiff_1 \\
 & np_3 np_2 X4 X3 = k1_fdiff_1 (k1_pdiff_2 np_3 np_2 X4 X3) X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
 & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\
 & (m2_finseq_2 X3 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X4.((\\
 & v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid \\
 & np_3) k1_numbers)))) \Rightarrow (((X3 = k11_finseq_1 X0 X1 X2) \wedge (r8_pdiff_5 \\
 & X4 X3)) \Rightarrow (k8_pdiff_5 X4 X3 = k1_fdiff_1 (k1_pdiff_2 np_3 np_2 (\\
 & k1_pdiff_3 np_3 np_3 X4) X3) X1))))))
 \end{aligned} \tag{2}$$

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.

$$\neg v1_xboole_0 \ np_3 \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 \ X0) \wedge (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & (k1_euclid \ np_3) \ k1_numbers)))) \Rightarrow (\forall X1. (m2_finseq_2 \ X1 \\ & k1_numbers \ (k1_euclid \ np_3)) \Rightarrow ((r8_pdiff_5 \ X0 \ X1) \Leftrightarrow (\exists X2. \\ & (m1_subset_1 \ X2 \ k1_numbers) \wedge (\exists X3. (m1_subset_1 \ X3 \ k1_numbers) \wedge \\ & (\exists X4. (m1_subset_1 \ X4 \ k1_numbers) \wedge ((X1 = k11_finseq_1 \ X2 \\ & X3 \ X4) \wedge (\exists X5. (m1_rcomp_1 \ X5 \ X3) \wedge ((r1_tarski \ X5 \ (k1_relset_1 \\ & k1_numbers \ (k1_pdiff_2 \ np_3 \ np_2 \ (k1_pdiff_3 \ np_3 \ np_3 \ X0) \\ & X1)))) \wedge (\exists X6. ((v1_funct_1 \ X6) \wedge ((v3_fdiff_1 \ X6) \wedge (m1_subset_1 \\ & X6 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))))) \wedge (\exists X7. \\ & ((v1_funct_1 \ X7) \wedge ((v2_fdiff_1 \ X7) \wedge (m1_subset_1 \ X7 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))))) \wedge (\forall X8. (m1_subset_1 \\ & X8 \ k1_numbers) \Rightarrow ((X8 \in X5) \Rightarrow (k9_real_1 \ (k1_seq_1 \ (k1_pdiff_2 \ np_3 \\ & np_2 \ (k1_pdiff_3 \ np_3 \ np_3 \ X0) \ X1) \ X8) \ (k1_seq_1 \ (k1_pdiff_2 \\ & np_3 \ np_2 \ (k1_pdiff_3 \ np_3 \ np_3 \ X0) \ X1) \ X3) = k7_real_1 \ (k1_seq_1 \\ & X6 \ (k9_real_1 \ X8 \ X3)) \ (k1_seq_1 \ X7 \ (k9_real_1 \ X8 \ X3)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. k11_finseq_1 \ X0 \ X1 \ X2 = k7_finseq_1 \\ & (k7_finseq_1 \ (k9_finseq_1 \ X0) \ (k9_finseq_1 \ X1)) \ (k9_finseq_1 \\ & \ X2) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m2_finseq_2 \ X0 \ k1_numbers \ (k1_euclid \ np_3)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (\\ & k1_euclid \ np_3) \ k1_numbers)))) \Rightarrow ((r8_pdiff_5 \ X1 \ X0) \Rightarrow (k8_pdiff_5 \\ & X1 \ X0 = k11_pdiff_1 \ np_3 \ np_2 \ (k1_pdiff_3 \ np_3 \ np_3 \ X1) \ X0))) \end{aligned}$$