

t53_pdiff_5

(TMKW3ViNfhLDu8AzQUEfu7ArpoLiCdtQYhT)

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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 $r2_pdiff_5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_2 : \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k11_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pdiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v2_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
 & \quad (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
 & \quad \quad ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (\\
 & \quad \quad \quad k1_euclid X0) k1_numbers)))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge (\\
 & \quad \quad m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X0) k1_numbers)))) \Rightarrow \\
 & \quad \quad (\forall X4.(m2_finseq_2 X4 k1_numbers (k1_euclid X0)) \Rightarrow (((r3_pdiff_1 \\
 & \quad \quad X0 X1 X2 X4) \wedge (r3_pdiff_1 X0 X1 X3 X4)) \Rightarrow ((r3_pdiff_1 X0 X1 (k47_valued_1 \\
 & \quad \quad (k1_euclid X0) k1_numbers k1_numbers X2 X3) X4) \wedge (k11_pdiff_1 X0 \\
 & \quad \quad X1 (k47_valued_1 (k1_euclid X0) k1_numbers k1_numbers X2 X3) X4 = \\
 & \quad \quad k9_real_1 (k11_pdiff_1 X0 X1 X2 X4) (k11_pdiff_1 X0 X1 X3 X4))))))))) \\
 & \hspace{15em} (1)
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(m2_finseq_2 X0 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X1. \\
 & \quad ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\
 & \quad \quad k1_euclid np_3) k1_numbers)))) \Rightarrow ((r2_pdiff_5 X1 X0) \Rightarrow (k2_pdiff_5 \\
 & \quad \quad X1 X0 = k11_pdiff_1 np_3 np_2 (k1_pdiff_3 np_1 np_3 X1) X0))) \\
 & \hspace{15em} (2)
 \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_finseq_2 X0 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\ & k1_euclid np_3) k1_numbers)))) \Rightarrow ((r2_pdiff_5 X1 X0) \Leftrightarrow (r3_pdiff_1 \\ & np_3 np_2 (k1_pdiff_3 np_1 np_3 X1) X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 np_3 \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X0 k5_numbers) \wedge \\ & (((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 k5_numbers)) \wedge ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \Rightarrow ((v1_funct_1 (k1_pdiff_3 X0 X1 X2)) \wedge ((v1_funct_2 \\ & (k1_pdiff_3 X0 X1 X2) (k1_euclid X1) k1_numbers) \wedge (m1_subset_1 \\ & (k1_pdiff_3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ & k1_numbers)))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_finseq_2 X0 k1_numbers (k1_euclid np_3)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\ & k1_euclid np_3) k1_numbers)))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid np_3) k1_numbers)))) \Rightarrow \\ & (((r2_pdiff_5 X1 X0) \wedge (r2_pdiff_5 X2 X0)) \Rightarrow ((r3_pdiff_1 np_3 np_2 \\ & (k47_valued_1 (k1_euclid np_3) k1_numbers k1_numbers (k1_pdiff_3 \\ & np_1 np_3 X1) (k1_pdiff_3 np_1 np_3 X2)) X0) \wedge (k11_pdiff_1 np_3 \\ & np_2 (k47_valued_1 (k1_euclid np_3) k1_numbers k1_numbers (\\ & k1_pdiff_3 np_1 np_3 X1) (k1_pdiff_3 np_1 np_3 X2)) X0 = k9_real_1 \\ & (k2_pdiff_5 X1 X0) (k2_pdiff_5 X2 X0)))))) \end{aligned}$$