

t24_pdiff_9

(TMQ4wp2AoNHLGbkWDT8tMnRBozKaP3MRtMX)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ 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 $k1_euclid : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $v1_pdiff_7 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $r2_pdiff_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_pdiff_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pdiff_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_nfcont_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k16_lopban_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ndiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r7_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_nfcont_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
 & (\forall X1.((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\
 & (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\forall X3. \\
 & ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (\\
 & k1_euclid X0) (k1_euclid X1)))))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge \\
 & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k4_real_ns1 \\
 & X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow (\forall X5.(m1_subset_1 \\
 & X5 (k1_zfmisc_1 (k1_euclid X0))) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
 & (k1_zfmisc_1 (u1_struct_0 (k4_real_ns1 X0)))) \Rightarrow (((r1_xxreal_0 \\
 & np_1 X2) \wedge (r1_xxreal_0 X2 X0) \wedge ((v1_pdiff_7 X5 X0) \wedge ((X4 = X3) \wedge \\
 & (X5 = X6)))))) \Rightarrow (((r2_pdiff_7 X0 X1 X2 X3 X5) \wedge (r4_pdiff_7 X0 X1 (k2_pdiff_7 \\
 & X0 X1 X2 X3 X5) X5)) \Rightarrow ((r7_pdiff_1 X0 X1 X2 X4 X6) \wedge (r3_nfcont_1 (k4_real_ns1 \\
 & X0) (k16_lopban_1 (k4_real_ns1 np_1) (k4_real_ns1 X1)) (k15_pdiff_1 \\
 & X0 X1 X2 X4 X6) X6))) \wedge (((r7_pdiff_1 X0 X1 X2 X4 X6) \wedge (r3_nfcont_1 (\\
 & k4_real_ns1 X0) (k16_lopban_1 (k4_real_ns1 np_1) (k4_real_ns1 \\
 & X1)) (k15_pdiff_1 X0 X1 X2 X4 X6) X6)) \Rightarrow ((r2_pdiff_7 X0 X1 X2 X3 X5) \wedge \\
 & (r4_pdiff_7 X0 X1 (k2_pdiff_7 X0 X1 X2 X3 X5) X5))))))))) \\
 & \tag{1}
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 (k4_real_ns1 \\
& X0)))) \Rightarrow ((v3_nfcont_1 X3 (k4_real_ns1 X0)) \Rightarrow ((\forall X4.(m2_subset_1 \\
& X4 k1_numbers k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 X4) \wedge (r1_xxreal_0 \\
& X4 X0)) \Rightarrow ((r7_pdiff_1 X0 X1 X4 X2 X3) \wedge (r3_nfcont_1 (k4_real_ns1 \\
& X0) (k16_lopban_1 (k4_real_ns1 np_1) (k4_real_ns1 X1)) (k15_pdiff_1 \\
& X0 X1 X4 X2 X3) X3)))) \Leftrightarrow ((r2_ndiff_1 X3 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1) X2) \wedge (r3_nfcont_1 (k4_real_ns1 X0) (k16_lopban_1 (k4_real_ns1 \\
& X0) (k4_real_ns1 X1)) (k4_ndiff_1 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1) X2 X3) X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_euclid X0))) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k4_real_ns1 X0)))) \Rightarrow \\
& ((X1 = X2) \Rightarrow ((v1_pdiff_7 X1 X0) \Leftrightarrow (v3_nfcont_1 X2 (k4_real_ns1 X0))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge (m2_subset_1 X1 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k1_euclid X0) (k1_euclid X1)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k4_real_ns1 \\
& X0)) (u1_struct_0 (k4_real_ns1 X1)))))) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (k1_zfmisc_1 (k1_euclid X0))) \Rightarrow (\forall X5.(m1_subset_1 X5 \\
& (k1_zfmisc_1 (u1_struct_0 (k4_real_ns1 X0)))) \Rightarrow (((X4 = X5) \wedge ((\\
& v1_pdiff_7 X4 X0) \wedge (X2 = X3)) \Rightarrow ((\forall X6.(m2_subset_1 X6 k1_numbers \\
& k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 X6) \wedge (r1_xxreal_0 X6 X0)) \Rightarrow (\\
& (r2_pdiff_7 X0 X1 X6 X2 X4) \wedge (r4_pdiff_7 X0 X1 (k2_pdiff_7 X0 X1 X6 \\
& X2 X4) X4)))) \Leftrightarrow ((r2_ndiff_1 X5 (k4_real_ns1 X0) (k4_real_ns1 X1) \\
& X3) \wedge (r3_nfcont_1 (k4_real_ns1 X0) (k16_lopban_1 (k4_real_ns1 \\
& X0) (k4_real_ns1 X1)) (k4_ndiff_1 (k4_real_ns1 X0) (k4_real_ns1 \\
& X1) X3 X5) X5))))))
\end{aligned}$$