

t22_pdiff_3 (TMQuZoGWH- nEumRZ7HkrTLk3MLh65wGnPysQ)

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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 $np_2 : \iota$ 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 $r2_pdiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& \quad (\forall X1. (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& \quad ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (\\
& \quad k1_euclid X0) k1_numbers)))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (\\
& \quad m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X0) k1_numbers)))) \Rightarrow \\
& \quad (\forall X4. (m2_finseq_2 X4 k1_numbers (k1_euclid X0)) \Rightarrow (((r3_pdiff_1 \\
& \quad X0 X1 X2 X4) \wedge (r3_pdiff_1 X0 X1 X3 X4)) \Rightarrow ((r3_pdiff_1 X0 X1 (k3_valued_1 \\
& \quad (k1_euclid X0) k1_numbers k1_numbers X2 X3) X4) \wedge (k11_pdiff_1 X0 \\
& \quad X1 (k3_valued_1 (k1_euclid X0) k1_numbers k1_numbers X2 X3) X4 = \\
& \quad k7_real_1 (k11_pdiff_1 X0 X1 X2 X4) (k11_pdiff_1 X0 X1 X3 X4))))))))) \\
& \hspace{15em} (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (m2_finseq_2 X0 k1_numbers (k1_euclid np_2)) \Rightarrow (\forall X1. \\
& ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\
& k1_euclid np_2) k1_numbers)))) \Rightarrow ((r2_pdiff_3 X1 X0) \Rightarrow (k3_pdiff_3 \\
& X1 X0 = k11_pdiff_1 np_2 np_2 (k1_pdiff_3 np_1 np_2 X1) X0))) \\
& \hspace{15em} (2)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (m2_finseq_2 X0 k1_numbers (k1_euclid np_2)) \Rightarrow (\forall X1. \\
& ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\
& k1_euclid np_2) k1_numbers)))) \Rightarrow ((r2_pdiff_3 X1 X0) \Leftrightarrow (r3_pdiff_1 \\
& np_2 np_2 (k1_pdiff_3 np_1 np_2 X1) X0))) \\
& \hspace{15em} (3)
\end{aligned}$$

Assume the following.

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

Assume the following.

$$\neg v1_xboole_0 \ np_2 \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 \ X0 \ k5_numbers) \wedge \\ & (((\neg v1_xboole_0 \ X1) \wedge (m1_subset_1 \ X1 \ k5_numbers)) \wedge ((v1_funct_1 \\ & \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k1_euclid \ X1) \\ & k1_numbers)))))) \Rightarrow ((v1_funct_1 \ (k1_pdiff_3 \ X0 \ X1 \ X2)) \wedge ((v1_funct_2 \\ & (k1_pdiff_3 \ X0 \ X1 \ X2) \ (k1_euclid \ X1) \ k1_numbers) \wedge (m1_subset_1 \\ & (k1_pdiff_3 \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k1_euclid \ X1) \\ & k1_numbers)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m2_finseq_2 \ X0 \ k1_numbers \ (k1_euclid \ np_2)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (\\ & k1_euclid \ np_2) \ k1_numbers)))) \Rightarrow (\forall X2. ((v1_funct_1 \ X2) \wedge \\ & (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k1_euclid \ np_2) \ k1_numbers)))) \Rightarrow \\ & (((r2_pdiff_3 \ X1 \ X0) \wedge (r2_pdiff_3 \ X2 \ X0)) \Rightarrow ((r3_pdiff_1 \ np_2 \ np_2 \\ & (k3_valued_1 \ (k1_euclid \ np_2) \ k1_numbers \ k1_numbers \ (k1_pdiff_3 \\ & np_1 \ np_2 \ X1) \ (k1_pdiff_3 \ np_1 \ np_2 \ X2)) \ X0) \wedge (k11_pdiff_1 \ np_2 \\ & np_2 \ (k3_valued_1 \ (k1_euclid \ np_2) \ k1_numbers \ k1_numbers \ (k1_pdiff_3 \\ & np_1 \ np_2 \ X1) \ (k1_pdiff_3 \ np_1 \ np_2 \ X2)) \ X0 = k7_real_1 \ (k3_pdiff_3 \\ & X1 \ X0) \ (k3_pdiff_3 \ X2 \ X0)))))) \end{aligned}$$