

t14_ndiff_4

(TML8vSvBtGUnYS7RDk5qYFjTSz4MXB822KR)

October 27, 2020

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 $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_nfcont_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_euclid : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & \quad (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 k1_numbers)) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers \\ & (k1_euclid X0)))))) \Rightarrow ((r2_ndiff_4 X0 X2 X1) \Rightarrow (v3_rcomp_1 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ & (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\ & \quad (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers (k1_euclid X0)))))) \Rightarrow ((r2_ndiff_4 X0 X2 X1) \Leftrightarrow ((r1_tarski \\ & X1 (k1_relset_1 k1_numbers X2)) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow \\ & ((X3 \in X1) \Rightarrow (r1_ndiff_4 X0 X2 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X1)\wedge(m2_subset_1 X1 k1_numbers \\ k5_numbers))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (\\ k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid X1))))))\Rightarrow((r2_ndiff_4 \\ X1 X2 X0)\Rightarrow(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(\forall X1.((\neg v1_xboole_0 \\ X1)\wedge(m2_subset_1 X1 k1_numbers k5_numbers))\Rightarrow(\forall X2.((v1_funct_1 \\ X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid \\ X1))))))\Rightarrow((r1_ndiff_4 X1 X2 X0)\Rightarrow((r1_ndiff_4 X1 (k2_nfcont_4 X1 \\ k1_numbers X2) X0)\wedge(k1_ndiff_4 X1 (k2_nfcont_4 X1 k1_numbers X2) \\ X0 = k6_euclid X1 (k1_ndiff_4 X1 X2 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 \\ X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (8)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (9)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X0 k5_numbers)\wedge \\ ((\neg v1_xboole_0 X1)\wedge((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X1 (k1_euclid X0)))))))\Rightarrow((v1_funct_1 (k2_nfcont_4 \\ X0 X1 X2))\wedge(m1_subset_1 (k2_nfcont_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ X1 (k1_euclid X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0)\wedge(m1_subset_1 \\ X0 k5_numbers))\wedge((v1_funct_1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ (k2_zfmisc_1 k1_numbers (k1_euclid X0))))))\Rightarrow((v1_funct_1 (k2_ndiff_4 \\ X0 X1 X2))\wedge(m1_subset_1 (k2_ndiff_4 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers (k1_euclid X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (\forall X2.(r2_ndiff_4 X0 X1 X2) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow ((X3 = k2_ndiff_4 X0 X1 X2) \Leftrightarrow ((k1_relset_1 \\
& k1_numbers X3 = X2) \wedge (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow (\\
& (X4 \in X2) \Rightarrow (k1_funct_1 X3 X4 = k1_ndiff_4 X0 X1 X4)))))) \\
& \hspace{15em} (13)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\
& (\neg v1_xboole_0 X1) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 (k1_euclid X0)))))) \Rightarrow (\forall X3. \\
& ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 \\
& (k1_euclid X0)))))) \Rightarrow ((X3 = k2_nfcont_4 X0 X1 X2) \Leftrightarrow ((k1_relset_1 \\
& X1 X3 = k1_relset_1 X1 X2) \wedge (\forall X4.(X4 \in k1_relset_1 X1 X3) \Rightarrow (\\
& k7_partfun1 (k1_euclid X0) X3 X4 = k6_euclid X0 (k7_partfun1 (k1_euclid \\
& X0) X2 X4)))))) \\
& \hspace{15em} (14)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
& (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers (k1_euclid X0)))))) \Rightarrow (((r1_tarski X1 (k1_relset_1 k1_numbers \\
& X2)) \wedge (r2_ndiff_4 X0 X2 X1)) \Rightarrow ((r2_ndiff_4 X0 (k2_nfcont_4 X0 k1_numbers \\
& X2) X1) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (k1_funct_1 \\
& (k2_ndiff_4 X0 (k2_nfcont_4 X0 k1_numbers X2) X1) X3 = k6_euclid \\
& X0 (k1_ndiff_4 X0 X2 X3))))))
\end{aligned}$$