

t5_fuzzy_4 (TMJgmrJyRiqvJwEvDkRMSBZJ-GRDnYZjzRah)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_fuzzy_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k1_fuzzy_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4_tarski\ X0\ X1 \in k2_zfmisc_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((m1_subset_1\ X2 (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))) \Rightarrow ((r2_relset_1\ X0\ X1\ X2\ X3) \Leftrightarrow (X2 = X3))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge ((v5_relat_1\ X2\ (k1_rcomp_1\ k6_numbers\ np_1)) \wedge ((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (k2_zfmisc_1\ X1\ X0)\ k1_numbers) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ X1\ X0)\ k1_numbers)))))))) \Rightarrow ((v5_relat_1\ (k2_fuzzy_4\ X0\ X1\ X2)\ (k1_rcomp_1\ k6_numbers\ np_1)) \wedge ((v1_funct_1\ (k2_fuzzy_4\ X0\ X1\ X2)) \wedge ((v1_funct_2\ (k2_fuzzy_4\ X0\ X1\ X2)\ (k2_zfmisc_1\ X0\ X1)\ k1_numbers) \wedge (m1_subset_1\ (k2_fuzzy_4\ X0\ X1\ X2)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)\ k1_numbers))))))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski\ X0\ X1 = k2_tarski\ (k2_tarski\ X0\ X1)\ (k1_tarski\ X0) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X1 X0) k1_numbers) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X0) \\
& k1_numbers)))))) \Rightarrow (\forall X3.((v5_relat_1 X3 (k1_rcomp_1 k6_numbers \\
& np_1)) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) \\
& k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1) k1_numbers)))))) \Rightarrow ((X3 = k2_fuzzy_4 X0 X1 X2) \Leftrightarrow (\forall X4. \\
& \forall X5.(k4_tarski X4 X5 \in k2_zfmisc_1 X0 X1) \Rightarrow (k1_fuzzy_4 X0 \\
& X1 X3 X4 X5 = k1_fuzzy_4 X1 X0 X2 X5 X4))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X1) k1_numbers) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) \\
& k1_numbers)))))) \Rightarrow (r2_relset_1 (k2_zfmisc_1 X0 X1) k1_numbers \\
& (k2_fuzzy_4 X0 X1 (k2_fuzzy_4 X1 X0 X2)) X2)))
\end{aligned}$$