

t18_lfuzzy_1

(TMGwg8pMqkegoc475EXn1cQqj4B4g3XgwWP)

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 $v2_lfuzzy_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_lfuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fuzzy_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge \\ & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X1) k1_numbers) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) \\ & k1_numbers)))))) \Rightarrow (\forall X3. ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers \\ & np_1)) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) \\ & k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1) k1_numbers)))))) \Rightarrow (r2_relset_1 (k2_zfmisc_1 X1 X0) k1_numbers \\ & (k2_fuzzy_4 X1 X0 (k2_fuzzy_1 (k2_zfmisc_1 X0 X1) X2 X3)) (k2_fuzzy_1 \\ & (k2_zfmisc_1 X1 X0) (k2_fuzzy_4 X1 X0 X2) (k2_fuzzy_4 X1 X0 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge \\ & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X1) k1_numbers) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) \\ & k1_numbers)))))) \Rightarrow (r2_relset_1 (k2_zfmisc_1 X0 X1) k1_numbers \\ & (k2_fuzzy_4 X0 X1 (k2_fuzzy_4 X1 X0 X2)) X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v5_relat_1 \\ & X1 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 X0 k1_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers))))))\wedge((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1))\wedge \\ & ((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 k1_numbers)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))\Rightarrow(k2_lfuzzy_1 \\ & X0 X1 X2 = k2_fuzzy_1 X0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow \\ & (\neg v1_xboole_0 (k2_zfmisc_1 X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 \\ & X1)\wedge((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X1 X0) k1_numbers)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X0) k1_numbers))))))\Rightarrow \\ & ((v5_relat_1 (k2_fuzzy_4 X0 X1 X2) (k1_rcomp_1 k6_numbers np_1))\wedge \\ & ((v1_funct_1 (k2_fuzzy_4 X0 X1 X2))\wedge((v1_funct_2 (k2_fuzzy_4 \\ & X0 X1 X2) (k2_zfmisc_1 X0 X1) k1_numbers)\wedge(m1_subset_1 (k2_fuzzy_4 \\ & X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) k1_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v5_relat_1 \\ & X1 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 X0 k1_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers))))))\wedge((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1))\wedge \\ & ((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 k1_numbers)\wedge(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))\Rightarrow((v5_relat_1 \\ & (k2_fuzzy_1 X0 X1 X2) (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 \\ & (k2_fuzzy_1 X0 X1 X2))\wedge((v1_funct_2 (k2_fuzzy_1 X0 X1 X2) X0 k1_numbers)\wedge \\ & (m1_subset_1 (k2_fuzzy_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(((v5_relat_1 X1 (k1_rcomp_1 \\ & k6_numbers np_1))\wedge((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) k1_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) k1_numbers))))))\Rightarrow((v2_lfuzzy_1 X1 X0)\Leftrightarrow(r2_relset_1 \\ & (k2_zfmisc_1 X0 X0) k1_numbers (k2_fuzzy_4 X0 X0 X1) X1))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v5_relat_1 \\
& X1 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 X0 k1_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\
& k1_numbers)))))) \wedge ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge \\
& ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))))) \Rightarrow (k2_fuzzy_1 \\
& X0 X1 X2 = k2_fuzzy_1 X0 X2 X1)
\end{aligned} \tag{9}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\
& X0 X0) k1_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0) k1_numbers)))))) \Rightarrow (v2_lfuzzy_1 (k2_lfuzzy_1 \\
& (k2_zfmisc_1 X0 X0) X1 (k2_fuzzy_4 X0 X0 X1)) X0))
\end{aligned}$$