

t4_fuzzy_2

(TMZs1s3Hgeg4Qu5XasRc9oNzZhxmcfDLrxS)

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 $k1_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fuzzy_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
 & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))) \Rightarrow \\
 & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
 & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))) \Rightarrow (\forall X3. \\
 & ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\
 & X3) \wedge ((v1_funct_2 X3 X0 k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 k1_numbers))))) \Rightarrow ((r1_fuzzy_1 X1 X2) \Rightarrow (r1_fuzzy_1 \\
 & (k1_fuzzy_1 X0 X1 X3) (k1_fuzzy_1 X0 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((v5_relat_1 X1 (k1_rcomp_1 \\
 & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))) \Rightarrow \\
 & ((v5_relat_1 (k3_fuzzy_1 X0 X1) (k1_rcomp_1 k6_numbers np_1)) \wedge \\
 & ((v1_funct_1 (k3_fuzzy_1 X0 X1)) \wedge ((v1_funct_2 (k3_fuzzy_1 X0 \\
 & X1) X0 k1_numbers) \wedge (m1_subset_1 (k3_fuzzy_1 X0 X1) (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 k1_numbers)))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (k1_fuzzy_2 \\
& X0 X1 X2 = k1_fuzzy_1 X0 X1 (k3_fuzzy_1 X0 X2)))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (\forall X3. \\
& ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 X0 k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((r1_fuzzy_1 X1 X2) \Rightarrow (r1_fuzzy_1 \\
& (k1_fuzzy_2 X0 X1 X3) (k1_fuzzy_2 X0 X2 X3))))))
\end{aligned}$$