

t20_fuzzy_1

(TMMx6zeJrnC3XpW9eMwc1VYq1M4r7Lx5w7T)

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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 $k2_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
 & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
 & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
 & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (\forall X3. \\
 & ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\
 & X3) \wedge ((v1_funct_2 X3 X0 k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((r2_funct_2 X0 k1_numbers \\
 & (k2_fuzzy_1 X0 (k2_fuzzy_1 X0 X1 X2) X3) (k2_fuzzy_1 X0 X1 (k2_fuzzy_1 \\
 & X0 X2 X3))) \wedge (r2_funct_2 X0 k1_numbers (k1_fuzzy_1 X0 (k1_fuzzy_1 \\
 & X0 X1 X2) X3) (k1_fuzzy_1 X0 X1 (k1_fuzzy_1 X0 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
 & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
 & (r1_fuzzy_1 X1 X1)
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (\forall X3. \\
& ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 X0 k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (((r1_fuzzy_1 X1 X2) \wedge (r1_fuzzy_1 \\
& X3 X2)) \Rightarrow (r1_fuzzy_1 (k2_fuzzy_1 X0 X1 X3) X2))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((r1_fuzzy_1 \\
& (k1_fuzzy_1 X0 X1 X2) X1) \wedge (r1_fuzzy_1 X1 (k2_fuzzy_1 X0 X1 X2))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
& (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (((r1_fuzzy_1 \\
& X1 X2) \wedge (r1_fuzzy_1 X2 X1)) \Rightarrow (r2_funct_2 X0 k1_numbers X1 X2))))
\end{aligned} \tag{6}$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v5_relat_1 \\
& X1 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 X1)\wedge((v1_funct_2 \\
& X1 X0 k1_numbers)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\
& k1_numbers))))))\wedge((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1))\wedge \\
& ((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 k1_numbers)\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))\wedge((v5_relat_1 \\
& X3 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 \\
& X3)\wedge((v1_funct_2 X3 X0 k1_numbers)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k1_numbers))))))\wedge((r1_fuzzy_1 X1 X2)\wedge((r1_fuzzy_1 \\
& (k2_fuzzy_1 X0 X1 X3) (k2_fuzzy_1 X0 X2 X3))))))\Rightarrow(k2_fuzzy_1 \\
& X0 X1 X2 = k2_fuzzy_1 X0 X2 X1)
\end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v5_relat_1 X1 (k1_rcomp_1 \\
& k6_numbers np_1))\wedge((v1_funct_1 X1)\wedge((v1_funct_2 X1 X0 k1_numbers)\wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))\Rightarrow \\
& (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1))\wedge(\\
& (v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 k1_numbers)\wedge(m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))\Rightarrow(\forall X3. \\
& ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1))\wedge((v1_funct_1 \\
& X3)\wedge((v1_funct_2 X3 X0 k1_numbers)\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k1_numbers))))))\Rightarrow((r1_fuzzy_1 X1 X2)\wedge((r1_fuzzy_1 \\
& (k2_fuzzy_1 X0 X1 X3) (k2_fuzzy_1 X0 X2 X3))))))
\end{aligned}$$