

t34_fuzzy_1

(TMc8S5ybPYP7JDrmeNasMSM1cEXjTY8gNp3)

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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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_fuzzy_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\
 & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\
 & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\
 & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((r1_fuzzy_1 \\
 & (k1_fuzzy_1 X0 X1 X2) X1) \wedge (r1_fuzzy_1 X1 (k2_fuzzy_1 X0 X1 X2))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v5_relat_1 X1 (k1_rcomp_1 \\ & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2. ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\ & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (((r1_fuzzy_1 \\ & X1 X2) \wedge (r1_fuzzy_1 X2 X1)) \Rightarrow (r2_funct_2 X0 k1_numbers X1 X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v5_relat_1 \\ & X1 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 X0 k1_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers)))))) \wedge ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((v5_relat_1 \\ & (k1_fuzzy_1 X0 X1 X2) (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\ & (k1_fuzzy_1 X0 X1 X2)) \wedge ((v1_funct_2 (k1_fuzzy_1 X0 X1 X2) X0 k1_numbers) \wedge \\ & (m1_subset_1 (k1_fuzzy_1 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v5_relat_1 \\ & X1 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 \\ & X1 X0 k1_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 \\ & k1_numbers)))))) \wedge ((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (k1_fuzzy_1 \\ & X0 X1 X2 = k1_fuzzy_1 X0 X2 X1) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v5_relat_1 X1 (k1_rcomp_1 \\ & k6_numbers np_1)) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 k1_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow \\ & (\forall X2.((v5_relat_1 X2 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\ & (v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 k1_numbers) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (\forall X3. \\ & ((v5_relat_1 X3 (k1_rcomp_1 k6_numbers np_1)) \wedge ((v1_funct_1 \\ & X3) \wedge ((v1_funct_2 X3 X0 k1_numbers) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow ((r2_funct_2 X0 k1_numbers \\ & X1 (k1_fuzzy_1 X0 X2 X3)) \Leftrightarrow ((r1_fuzzy_1 X1 X2) \wedge ((r1_fuzzy_1 X1 X3) \wedge \\ & (\forall X4.((v5_relat_1 X4 (k1_rcomp_1 k6_numbers np_1)) \wedge (\\ & (v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 k1_numbers) \wedge (m1_subset_1 \\ & X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))))) \Rightarrow (((r1_fuzzy_1 \\ & X4 X2) \wedge (r1_fuzzy_1 X4 X3)) \Rightarrow (r1_fuzzy_1 X4 X1)))))) \end{aligned}$$