

## t42\_fuzzy\_1

(TMVrncEu2ifiZVFWwPW3hKsHAHUh2bmyRGZ)

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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  $k6\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_fuzzy\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_fuzzy\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow & ((r2\_funct\_2 X0 k1\_numbers (k3\_fuzzy\_1 \\ X0 (k4\_fuzzy\_1 X0)) (k5\_fuzzy\_1 X0)) \wedge & (r2\_funct\_2 X0 k1\_numbers \\ (k3\_fuzzy\_1 X0 (k5\_fuzzy\_1 X0)) (k4\_fuzzy\_1 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow & (\forall X1. ((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ k6\_numbers np\_1)) \wedge & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow & \\ ((r2\_funct\_2 X0 k1\_numbers (k2\_fuzzy\_1 X0 X1 (k5\_fuzzy\_1 X0)) ( & \\ k5\_fuzzy\_1 X0)) \wedge & ((r2\_funct\_2 X0 k1\_numbers (k1\_fuzzy\_1 X0 X1 ( \\ k5\_fuzzy\_1 X0)) X1) \wedge & ((r2\_funct\_2 X0 k1\_numbers (k2\_fuzzy\_1 X0 \\ X1 (k4\_fuzzy\_1 X0)) X1) \wedge & (r2\_funct\_2 X0 k1\_numbers (k1\_fuzzy\_1 \\ X0 X1 (k4\_fuzzy\_1 X0)) (k4\_fuzzy\_1 X0)))))) \end{aligned} \quad (2)$$

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.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((v5\_relat\_1 (k5\_fuzzy\_1 X0) (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 (k5\_fuzzy\_1 X0)) \wedge ((v1\_funct\_2 (k5\_fuzzy\_1 X0) X0 k1\_numbers) \wedge (m1\_subset\_1 (k5\_fuzzy\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \quad (4)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow ((v5\_relat\_1 (k4\_fuzzy\_1 X0) (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 (k4\_fuzzy\_1 X0)) \wedge ((v1\_funct\_2 (k4\_fuzzy\_1 X0) X0 k1\_numbers) \wedge (m1\_subset\_1 (k4\_fuzzy\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((v5\_relat\_1 X1 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \Rightarrow \\ & ((v5\_relat\_1 (k3\_fuzzy\_1 X0 X1) (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 (k3\_fuzzy\_1 X0 X1)) \wedge ((v1\_funct\_2 (k3\_fuzzy\_1 X0 X1) X0 k1\_numbers) \wedge (m1\_subset\_1 (k3\_fuzzy\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge (((v5\_relat\_1 X1 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \wedge ((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 k1\_numbers) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \Rightarrow ((v5\_relat\_1 (k1\_fuzzy\_1 X0 X1 X2) (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 (k1\_fuzzy\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 (k1\_fuzzy\_1 X0 X1 X2) X0 k1\_numbers) \wedge (m1\_subset\_1 (k1\_fuzzy\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v5\_relat\_1 X1 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \Rightarrow \\ & (\forall X2. ((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 k1\_numbers) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))) \Rightarrow (k6\_fuzzy\_1 X0 X1 X2 = k2\_fuzzy\_1 X0 (k1\_fuzzy\_1 X0 X1 (k3\_fuzzy\_1 X0 X2)) (k1\_fuzzy\_1 X0 (k3\_fuzzy\_1 X0 X1) X2))) \end{aligned} \quad (8)$$

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**

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v5\_relat\_1 X1 (k1\_rcomp\_1 \\
& k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow \\
& (r2\_funct\_2 X0 k1\_numbers (k6\_fuzzy\_1 X0 X1 (k5\_fuzzy\_1 X0)) (k3\_fuzzy\_1 \\
& X0 X1)))
\end{aligned}$$