

t56\_fuzzy\_2  
(TMa6hiA9KjujqHiRtisK6ZrwBRQ7KeP8qXJ)

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  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_fuzzy\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fuzzy\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\
& (\forall X2.((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ( \\
& (v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X1) k1\_numbers) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) \\
& k1\_numbers)))))) \Rightarrow (\forall X3.((v5\_relat\_1 X3 (k1\_rcomp\_1 k6\_numbers \\
& np\_1)) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) \\
& k1\_numbers) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1) k1\_numbers)))))) \Rightarrow ((r2\_funct\_2 (k2\_zfmisc\_1 X0 X1) k1\_numbers \\
& (k1\_fuzzy\_2 (k2\_zfmisc\_1 X0 X1) X2 X3) (k4\_fuzzy\_2 X0 X1)) \Rightarrow (r1\_fuzzy\_1 \\
& X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v5\_relat\_1 X1 (k1\_rcomp\_1 \\
& k6\_numbers np\_1)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow \\
& (\forall X2.((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1)) \wedge ( \\
& (v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 k1\_numbers) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \Rightarrow ((r1\_fuzzy\_1 \\
& X1 X2) \Rightarrow (r2\_funct\_2 X0 k1\_numbers (k1\_fuzzy\_1 X0 X1 X2) X1))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k1\_numbers)\wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow \\ (k3\_fuzzy\_1 X0 (k3\_fuzzy\_1 X0 X1) = X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(\neg v1\_xboole\_0 X1))\Rightarrow \\ (\neg v1\_xboole\_0 (k2\_zfmisc\_1 X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k1\_numbers)\wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow \\ ((v5\_relat\_1 (k3\_fuzzy\_1 X0 X1) (k1\_rcomp\_1 k6\_numbers np\_1))\wedge \\ ((v1\_funct\_1 (k3\_fuzzy\_1 X0 X1))\wedge((v1\_funct\_2 (k3\_fuzzy\_1 X0 \\ X1) X0 k1\_numbers)\wedge(m1\_subset\_1 (k3\_fuzzy\_1 X0 X1) (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 k1\_numbers)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k1\_numbers)\wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow \\ (\forall X2.((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1))\wedge( \\ (v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 k1\_numbers)\wedge(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow(k1\_fuzzy\_2 \\ X0 X1 X2 = k1\_fuzzy\_1 X0 X1 (k3\_fuzzy\_1 X0 X2)))) \end{aligned} \quad (6)$$

### Theorem 1

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow \\ (\forall X2.((v5\_relat\_1 X2 (k1\_rcomp\_1 k6\_numbers np\_1))\wedge( \\ (v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X1) k1\_numbers)\wedge \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) \\ k1\_numbers))))))\Rightarrow(\forall X3.((v5\_relat\_1 X3 (k1\_rcomp\_1 k6\_numbers \\ np\_1))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) \\ k1\_numbers)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 X1) k1\_numbers))))))\Rightarrow((r2\_funct\_2 (k2\_zfmisc\_1 X0 X1) k1\_numbers \\ (k1\_fuzzy\_1 (k2\_zfmisc\_1 X0 X1) X2 X3) (k4\_fuzzy\_2 X0 X1))\Rightarrow(r2\_funct\_2 \\ (k2\_zfmisc\_1 X0 X1) k1\_numbers (k1\_fuzzy\_2 (k2\_zfmisc\_1 X0 X1) \\ X2 X3) X2)))))) \end{aligned}$$