t10_fuzzy_4 (TMZztNaKYdYmpFA6Lr71HgtXdziwosqhGU8)

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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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1\_fuzzy\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_fuzzy\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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. Let $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1)) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers)))))) \Rightarrow (\forall X3.((v5\_relat\_1\ X3\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1)) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers)))))) \Rightarrow (r2\_relset\_1\ (k2\_zfmisc\_1\ X1\ X0)\ k1\_numbers\ (k2\_fuzzy\_4\ X1\ X0\ (k2\_fuzzy\_1\ (k2\_zfmisc\_1\ X0\ X1)\ X2\ X3))\ (k2\_fuzzy\_1\ (k2\_zfmisc\_1\ X1\ X0)\ (k2\_fuzzy\_4\ X1\ X0\ X2)\ (k2\_fuzzy\_4\ X1\ X0\ X3)))))) \tag{1}$$

Assume the following.

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

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v5\_relat\_1\ X1\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(\forall X2.((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(\forall X3.((v5\_relat\_1\ X3\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(((r1\_fuzzy\_1\ X1\ X2)\wedge(r1\_fuzzy\_1\ X3\ X2))\Rightarrow(r1\_fuzzy\_1\ (k2\_fuzzy\_1\ X0\ X1\ X3)\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v5\_relat\_1\ X1\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(\forall X2.((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow((r1\_fuzzy\_1\ (k1\_fuzzy\_1\ X0\ X1\ X2)\ X1)\wedge(r1\_fuzzy\_1\ X1\ (k2\_fuzzy\_1\ X0\ X1\ X2)))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow((r2\_relset\_1\ X0\ X1\ X2\ X3)\Leftrightarrow(X2=X3)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((r2\_funct\_2\ X0\ X1\ X2\ X3)\Leftrightarrow(X2=X3)) \tag{6}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{7}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v5\_relat\_1\ X1\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(\forall X2.((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow(((r1\_fuzzy\_1\ X1\ X2)\wedge(r1\_fuzzy\_1\ X2\ X1))\Rightarrow(r2\_funct\_2\ X0\ k1\_numbers\ X1\ X2))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(\neg v1\_xboole\_0\ X1))\Rightarrow(\neg v1\_xboole\_0\ (k2\_zfmisc\_1\ X0\ X1)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X1\ X0)\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X0)\ k1\_numbers))))))))\Rightarrow((v5\_relat\_1\ (k2\_fuzzy\_4\ X0\ X1\ X2)\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ (k2\_fuzzy\_4\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k2\_fuzzy\_4\ X0\ X1\ X2)\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers)\wedge(m1\_subset\_1\ (k2\_fuzzy\_4\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers))))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v5\_relat\_1\ X1\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\wedge((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))))\Rightarrow((v5\_relat\_1\ (k2\_fuzzy\_1\ X0\ X1\ X2)\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ (k2\_fuzzy\_1\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k2\_fuzzy\_1\ X0\ X1\ X2)\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ (k2\_fuzzy\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v5\_relat\_1\ X1\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\wedge((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))))\Rightarrow(k2\_fuzzy\_1\ X0\ X1\ X2 = k2\_fuzzy\_1\ X0\ X2\ X1) \tag{12}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow (\forall X2.((v5\_relat\_1\ X2\ (k1\_rcomp\_1\ k6\_numbers\ np\_\_1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X1)\ k1\_numbers)\wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1) k1\_numbers))))))\Rightarrow(\forall X3.((v5\_relat\_1\ X3\ (k1\_rcomp\_1\ k6\_numbers np\_\_1))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ X0\ X1) k1\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1 X0\ X1)\ k1\_numbers))))))\Rightarrow((r1\_fuzzy\_1\ X2\ X3)\Rightarrow(r1\_fuzzy\_1\ (k2\_fuzzy\_4 X1\ X0\ X2)\ (k2\_fuzzy\_4\ X1\ X0\ X3))))))$$