

# t24\_lfuzzy\_1 (TMUvcnsoqmvbQsmmRMFN- fyXhi7Ew2LRv8i1)

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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  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_lfuzzy\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_fuzzy\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_fuzzy\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1))) \wedge (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1)))) \Rightarrow (r2\_relset\_1 \ X0 \ X1 \ X2 \ X2) \tag{2}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{3}$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v5\_relat\_1 \\ & X1 (k1\_rcomp\_1 k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) k1\_numbers)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) k1\_numbers))))))\wedge(v7\_ordinal1 \\ & X2)))\Rightarrow((v5\_relat\_1 (k4\_lfuzzy\_1 X0 X1 X2) (k1\_rcomp\_1 k6\_numbers \\ & np\_1))\wedge((v1\_funct\_1 (k4\_lfuzzy\_1 X0 X1 X2))\wedge((v1\_funct\_2 (k4\_lfuzzy\_1 \\ & X0 X1 X2) (k2\_zfmisc\_1 X0 X0) k1\_numbers)\wedge(m1\_subset\_1 (k4\_lfuzzy\_1 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) k1\_numbers))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ & k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\ & X0 X0) k1\_numbers)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) k1\_numbers))))))\Rightarrow(\forall X2.(v7\_ordinal1 \\ & X2)\Rightarrow(\forall X3.((v5\_relat\_1 X3 (k1\_rcomp\_1 k6\_numbers np\_1))\wedge \\ & ((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X0) k1\_numbers)\wedge \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\ & k1\_numbers))))))\Rightarrow((X3 = k4\_lfuzzy\_1 X0 X1 X2)\Leftrightarrow(\exists X4.((v1\_funct\_1 \\ & X4)\wedge((v1\_funct\_2 X4 k5\_numbers (k9\_funct\_2 (k2\_zfmisc\_1 X0 X0) \\ & (k1\_rcomp\_1 k6\_numbers np\_1)))\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers (k9\_funct\_2 (k2\_zfmisc\_1 X0 X0) (k1\_rcomp\_1 \\ & k6\_numbers np\_1))))))\wedge((X3 = k8\_nat\_1 (k9\_funct\_2 (k2\_zfmisc\_1 \\ & X0 X0) (k1\_rcomp\_1 k6\_numbers np\_1)) X4 X2)\wedge((k8\_nat\_1 (k9\_funct\_2 \\ & (k2\_zfmisc\_1 X0 X0) (k1\_rcomp\_1 k6\_numbers np\_1)) X4 k6\_numbers = \\ & k5\_fuzzy\_4 X0 X0)\wedge(\forall X5.(v7\_ordinal1 X5)\Rightarrow(\exists X6.( \\ & (v5\_relat\_1 X6 (k1\_rcomp\_1 k6\_numbers np\_1))\wedge((v1\_funct\_1 X6)\wedge \\ & ((v1\_funct\_2 X6 (k2\_zfmisc\_1 X0 X0) k1\_numbers)\wedge(m1\_subset\_1 \\ & X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) k1\_numbers))))))\wedge \\ & ((k8\_nat\_1 (k9\_funct\_2 (k2\_zfmisc\_1 X0 X0) (k1\_rcomp\_1 k6\_numbers \\ & np\_1)) X4 X5 = X6)\wedge(k8\_nat\_1 (k9\_funct\_2 (k2\_zfmisc\_1 X0 X0) (k1\_rcomp\_1 \\ & k6\_numbers np\_1)) X4 (k1\_nat\_1 X5 np\_1) = k4\_fuzzy\_4 X0 X0 X0 X6 \\ & X1)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v6\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow (v7\_ordinal1 X1)) \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v5\_relat\_1 X1 (k1\_rcomp\_1 \\ & k6\_numbers np\_1))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\ & X0 X0) k1\_numbers)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) k1\_numbers))))))\Rightarrow(r2\_relset\_1 (k2\_zfmisc\_1 \\ & X0 X0) k1\_numbers (k4\_lfuzzy\_1 X0 X1 k6\_numbers) (k5\_fuzzy\_4 X0 \\ & X0))) \end{aligned}$$