

# t52\_group\_9 (TMRoigHZgvp- ZLR33QMCPthrQDfZgZu7DC4e)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_group\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_group\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\
& X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2. \forall X3. \\
& ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X0)) \wedge ((v1\_group\_6 X3 X1 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0))))))) \Rightarrow ((r1\_struct\_0 (k10\_group\_6 \\
& X1 X0 X3) X2) \Leftrightarrow (\exists X4. (m1\_subset\_1 X4 (u1\_struct\_0 X1)) \wedge (X2 = \\
& k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X0) X3 X4))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\
& X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge ((v1\_group\_6 \\
& X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1))))))) \Rightarrow (k2\_relset\_1 (u1\_struct\_0 X1) X2 = \\
& u1\_struct\_0 (k10\_group\_6 X0 X1 X2))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge(l3\_algstr\_0 X1)))) \quad (5)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_group\_9 X1 X0)\Rightarrow(l3\_algstr\_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge((v3\_group\_1 X1)\wedge(l3\_algstr\_0 X1))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge((v1\_group\_6 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))))))\Rightarrow((v15\_algstr\_0 (k10\_group\_6 X0 X1 X2))\wedge(m1\_group\_2 (k10\_group\_6 X0 X1 X2) X1)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow(\forall X1.(r1\_struct\_0 X0 X1)\Leftrightarrow (X1 \in u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v5\_relat\_1 X1 X0))\Rightarrow((v2\_funct\_2 X1 X0)\Leftrightarrow(k2\_relset\_1 X0 X1 = X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2. ((\neg v2\_struct\_0 X2) \wedge ((v2\_group\_1 X2) \wedge ((v3\_group\_1 \\ & X2) \wedge ((v2\_group\_9 X2 X0) \wedge ((v3\_group\_9 X2 X0) \wedge (l1\_group\_9 X2 X0)))))) \Rightarrow \\ & (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) \\ & (u1\_struct\_0 X2)) \wedge ((v1\_group\_6 X3 X1 X2) \wedge ((v7\_group\_9 X3 X0 X1 \\ & X2) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) \\ & (u1\_struct\_0 X2)))))) \Rightarrow ((v2\_funct\_2 X3 (u1\_struct\_0 X2)) \Rightarrow ( \\ & \forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X2)) \Rightarrow (\exists X5. (m1\_subset\_1 \\ & X5 (u1\_struct\_0 X1)) \wedge (k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 \\ & X2) X3 X5 = X4)))))) \end{aligned}$$