

t54\_midsp\_1 (TMYZ-  
ifMz6XxxUGZsKDKSBixhobgHioNW27M)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_midsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_midsp\_1 : \iota \Rightarrow o$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_midsp\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_midsp\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k12\_midsp\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $g2\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v8\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k14\_midsp\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1\_xboole\_0 X1) \wedge (\neg v1\_xboole\_0 X3) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X0 X1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 X2 X3) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3)))))) \Rightarrow ((r1\_funct\_2 X0 X1 X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge (m1\_subset\_1 X2 X0)) \Rightarrow (\forall X3. \forall X4. \forall X5. (g2\_algstr\_0 X0 X1 X2 = g2\_algstr\_0 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 X0))) \Rightarrow ((\neg v2\_struct\_0 (k15\_midsp\_1 X0)) \wedge (v8\_algstr\_0 (k15\_midsp\_1 X0))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 X0))) \Rightarrow (\neg v1\_xboole\_0 (k10\_midsp\_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (u2\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_algstr\_0 X0) \Rightarrow & ((v1\_funct\_1 (u1\_algstr\_0 X0)) \wedge \\ & ((v1\_funct\_2 (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u1\_algstr\_0 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 X0))) \Rightarrow (l2\_algstr\_0 (k15\_midsp\_1 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\ X0))) \Rightarrow & (k15\_midsp\_1 X0 = g2\_algstr\_0 (k10\_midsp\_1 X0) (k12\_midsp\_1 \\ & X0) (k14\_midsp\_1 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((v8\_algstr\_0 X0) \Rightarrow (X0 = g2\_algstr\_0 (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (u2\_struct\_0 X0))) \quad (10)$$

### Theorem 1

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\ X0))) \Rightarrow & (r1\_funct\_2 (k2\_zfmisc\_1 (u1\_struct\_0 (k15\_midsp\_1 X0)) \\ & (u1\_struct\_0 (k15\_midsp\_1 X0))) (u1\_struct\_0 (k15\_midsp\_1 X0)) \\ & (k2\_zfmisc\_1 (k10\_midsp\_1 X0) (k10\_midsp\_1 X0)) (k10\_midsp\_1 \\ & X0) (u1\_algstr\_0 (k15\_midsp\_1 X0) (k12\_midsp\_1 X0)) \end{aligned}$$