

t24\_midsp\_3  
(TMHZARGMVPg2X1kv5s7c64qDJKa6z6iyA4s)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m2\_midsp\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v4\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_midsp\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_midsp\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_midsp\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. 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  $k9\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $l1\_midsp\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_midsp\_2 X1 X0) \wedge (l1\_midsp\_2 X1 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 \\
& X6 (u1\_struct\_0 (u1\_midsp\_2 X0 X1))) \Rightarrow ((k9\_midsp\_2 X0 X1 X2 X2 = k11\_midsp\_2 \\
& X0 X1) \wedge ((k9\_midsp\_2 X0 X1 X2 X3 = k11\_midsp\_2 X0 X1) \Rightarrow (X2 = X3)) \wedge ( \\
& (k9\_midsp\_2 X0 X1 X2 X3 = k4\_algstr\_0 (u1\_midsp\_2 X0 X1) (k9\_midsp\_2 \\
& X0 X1 X3 X2)) \wedge ((k9\_midsp\_2 X0 X1 X2 X3 = k9\_midsp\_2 X0 X1 X4 X5) \Rightarrow (k9\_midsp\_2 \\
& X0 X1 X3 X2 = k9\_midsp\_2 X0 X1 X5 X4)) \wedge ((\forall X7.(m1\_subset\_1 X7 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 ( \\
& u1\_midsp\_2 X0 X1))) \Rightarrow (\exists X9.(m1\_subset\_1 X9 (u1\_struct\_0 \\
& X0)) \wedge (k9\_midsp\_2 X0 X1 X9 X7 = X8)))) \wedge ((k9\_midsp\_2 X0 X1 X3 X2 = k9\_midsp\_2 \\
& X0 X1 X4 X2) \Rightarrow (X3 = X4)) \wedge ((k3\_midsp\_1 X0 X2 X3 = X4) \Rightarrow (k9\_midsp\_2 X0 \\
& X1 X2 X4 = k9\_midsp\_2 X0 X1 X4 X3)) \wedge ((k9\_midsp\_2 X0 X1 X2 X4 = k9\_midsp\_2 \\
& X0 X1 X4 X3) \Rightarrow (k3\_midsp\_1 X0 X2 X3 = X4)) \wedge ((k3\_midsp\_1 X0 X2 X3 = k3\_midsp\_1 \\
& X0 X4 X5) \Rightarrow (k9\_midsp\_2 X0 X1 X2 X5 = k9\_midsp\_2 X0 X1 X4 X3)) \wedge ((k9\_midsp\_2 \\
& X0 X1 X2 X5 = k9\_midsp\_2 X0 X1 X4 X3) \Rightarrow (k3\_midsp\_1 X0 X2 X3 = k3\_midsp\_1 \\
& X0 X4 X5)) \wedge ((k9\_midsp\_2 X0 X1 X2 X3 = X6) \Rightarrow (k10\_midsp\_2 X0 X1 X2 X6 = \\
& X3)) \wedge ((k10\_midsp\_2 X0 X1 X2 X6 = X3) \Rightarrow (k9\_midsp\_2 X0 X1 X2 X3 = X6))))))))))))) \\
& \hspace{15em} (2)
\end{aligned}$$

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.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \quad (4)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (5)
\end{aligned}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m2\_midsp\_3 \\ & X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. \\ & (m2\_finseq\_2 X3 (u1\_struct\_0 X1) (k4\_finseq\_2 (k2\_nat\_1 X0 np\_1) \\ & (u1\_struct\_0 X1))) \Rightarrow (\forall X4.((v4\_midsp\_2 X4 X1) \wedge (l1\_midsp\_2 \\ & X4 X1)) \Rightarrow (\forall X5.(m2\_finseq\_2 X5 (u1\_struct\_0 (u1\_midsp\_2 \\ & X1 X4)) (k4\_finseq\_2 (k2\_nat\_1 X0 np\_1) (u1\_struct\_0 (u1\_midsp\_2 \\ & X1 X4)))) \Rightarrow ((k7\_midsp\_3 X0 X1 X4 X2 X5 = X3) \Rightarrow (k10\_midsp\_3 X0 X1 X4 X5 = \\ & k9\_midsp\_2 X1 X4 X2 (k4\_midsp\_3 X0 X1 X2 X3))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m2\_midsp\_3 \\ & X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge ((v2\_midsp\_1 X1) \wedge (l1\_midsp\_3 X1 (k2\_nat\_1 \\ & X0 np\_2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(l1\_midsp\_3 \\ & X1 X0) \Rightarrow (l1\_midsp\_1 X1)) \end{aligned} \quad (10)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 \\ & X1)) \Rightarrow (m2\_subset\_1 (k2\_nat\_1 X0 X1) k1\_numbers k5\_numbers) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m2\_midsp\_3 \\ & X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m2\_finseq\_2 X4 \\ & (u1\_struct\_0 X1) (k4\_finseq\_2 (k2\_nat\_1 X0 np\_1) (u1\_struct\_0 \\ & X1))) \Rightarrow (\forall X5.((v4\_midsp\_2 X5 X1) \wedge (l1\_midsp\_2 X5 X1)) \Rightarrow (\forall X6. \\ & (m1\_subset\_1 X6 (u1\_struct\_0 (u1\_midsp\_2 X1 X5))) \Rightarrow (\forall X7. \\ & (m2\_finseq\_2 X7 (u1\_struct\_0 (u1\_midsp\_2 X1 X5)) (k4\_finseq\_2 \\ & (k2\_nat\_1 X0 np\_1) (u1\_struct\_0 (u1\_midsp\_2 X1 X5)))) \Rightarrow ((k7\_midsp\_3 \\ & X0 X1 X5 X2 X7 = X4) \wedge ((k10\_midsp\_2 X1 X5 X2 X6 = X3) \wedge (k4\_midsp\_3 X0 X1 \\ & X2 X4 = X3)))) \Rightarrow (k10\_midsp\_3 X0 X1 X5 X7 = X6))))))))) \end{aligned}$$