

t52\_midsp\_1  
(TMKzVBoVZVpG6zjGia26Zm9xeb7bKs6vvn4)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_midsp\_1 : \iota \Rightarrow \iota$  be given. Let  $k11\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_midsp\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k10\_midsp\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k10\_midsp\_1 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (k10\_midsp\_1 X0)) \Rightarrow (k11\_midsp\_1 X0 (k11\_midsp\_1 X0 X1 X2) X3 = k11\_midsp\_1 \\ & X0 X1 (k11\_midsp\_1 X0 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k10\_midsp\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k10\_midsp\_1 X0)) \Rightarrow (k11\_midsp\_1 X0 X1 X2 = k11\_midsp\_1 \\ & X0 X2 X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\ & X0))) \Rightarrow (\forall X1.(m1\_midsp\_1 X1 X0) \Rightarrow (k7\_midsp\_1 X0 X1 (k6\_midsp\_1 \\ & X0) = X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 \\ & X0) \wedge (l1\_midsp\_1 X0))) \wedge ((m1\_subset\_1 X1 (k10\_midsp\_1 X0)) \wedge (m1\_subset\_1 \\ & X2 (k10\_midsp\_1 X0)))) \Rightarrow (m1\_subset\_1 (k11\_midsp\_1 X0 X1 X2) (k10\_midsp\_1 \\ & X0)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k10\_midsp\_1 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (k10\_midsp\_1 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (k10\_midsp\_1 X0)) \Rightarrow ((X3 = k11\_midsp\_1 X0 X1 X2) \Leftrightarrow (\forall X4.(m1\_midsp\_1 \\
& X4 X0) \Rightarrow (\forall X5.(m1\_midsp\_1 X5 X0) \Rightarrow (((X1 = X4) \wedge (X2 = X5)) \Rightarrow (X3 = \\
& k7\_midsp\_1 X0 X4 X5)))))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_midsp\_1 X0) \wedge (l1\_midsp\_1 \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k10\_midsp\_1 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (k10\_midsp\_1 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (k10\_midsp\_1 X0)) \Rightarrow (((k11\_midsp\_1 X0 X1 X2 = k6\_midsp\_1 X0) \wedge (k11\_midsp\_1 \\
& X0 X1 X3 = k6\_midsp\_1 X0)) \Rightarrow (X2 = X3))))))
\end{aligned}$$