

t23\_msaterm  
(TMWg4LBWHVNSxaKdzm3jbtPGe57zv1quGmp)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_msualg\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_msaterm : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_msaterm : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_dtconstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_msafree : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_trees\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_msaterm : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_msaterm : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge ((v2\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 (u1\_struct\_0 X0)) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u4\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_msaterm X3 X0 X1 (k2\_msaterm X0 X1 X2)) \Rightarrow ((k3\_finseq\_1 X3 = k3\_finseq\_1 \\
& (k1\_msualg\_1 X0 X2)) \wedge ((k4\_finseq\_1 X3 = k4\_finseq\_1 (k1\_msualg\_1 \\
& X0 X2)) \wedge (\forall X4. (v7\_ordinal1 X4) \Rightarrow (\neg (X4 \in k4\_finseq\_1 X3) \wedge \\
& (\forall X5. (m1\_dtconstr X5 (u1\_struct\_0 (k5\_msafree X0 X1)) ( \\
& k5\_trees\_3 (u1\_struct\_0 (k5\_msafree X0 X1))) (k1\_msaterm X0 X1)) \Rightarrow \\
& (\neg (X5 = k1\_funct\_1 X3 X4) \wedge ((X5 = k7\_partfun1 (k1\_msaterm X0 X1) X3 \\
& X4) \wedge ((k7\_msaterm X0 X1 X5 = k1\_funct\_1 (k1\_msualg\_1 X0 X2) X4) \wedge ( \\
& k7\_msaterm X0 X1 X5 = k7\_partfun1 (u1\_struct\_0 X0) (k1\_msualg\_1 \\
& X0 X2) X4))))))))))
\end{aligned}$$

(1)

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\ & X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v2\_relat\_1 X1) \wedge (v4\_relat\_1 \\ & X1 (u1\_struct\_0 X0)) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 (u1\_struct\_0 \\ & X0)))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u4\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_msaterm X3 X0 X1 (k2\_msaterm X0 X1 X2)) \Rightarrow (\forall X4.(v7\_ordinal1 \\ & X4) \Rightarrow ((X4 \in k4\_finseq\_1 X3) \Rightarrow (\forall X5.(m1\_dtconstr X5 (u1\_struct\_0 \\ & (k5\_msafree X0 X1)) (k5\_trees\_3 (u1\_struct\_0 (k5\_msafree X0 X1))) \\ & (k1\_msaterm X0 X1)) \Rightarrow ((X5 = k1\_funct\_1 X3 X4) \Rightarrow ((X5 = k7\_partfun1 \\ & (k1\_msaterm X0 X1) X3 X4) \wedge ((k7\_msaterm X0 X1 X5 = k1\_funct\_1 (k1\_msualg\_1 \\ & X0 X2) X4) \wedge (k7\_msaterm X0 X1 X5 = k7\_partfun1 (u1\_struct\_0 X0) (k1\_msualg\_1 \\ & X0 X2) X4)))))))))) \end{aligned}$$