

t34\_osalg\_1 (TMX-  
okiA4zQBMQTkKWvbynSxjeU5z8MqYiWK)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $v5\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $v8\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $v10\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $l3\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $r1\_osalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_osalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_osalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l2\_osalg\_1 : \iota \Rightarrow o$  be given. Let  $r3\_osalg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_osalg\_1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u4\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u4\_struct\_0 X0)) \Rightarrow (((r1\_osalg\_1 X0 X1 X2) \wedge (r1\_osalg\_1 X0 X2 X3)) \Rightarrow \\ & (r1\_osalg\_1 X0 X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 \\ & X0) \wedge (l1\_osalg\_1 X0))) \wedge ((m1\_subset\_1 X1 (u4\_struct\_0 X0)) \wedge (m1\_subset\_1 \\ & X2 (u4\_struct\_0 X0)))) \Rightarrow ((r1\_osalg\_1 X0 X1 X2) \Rightarrow (r1\_osalg\_1 X0 X2 \\ & X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \tag{3}$$

Assume the following.

$$\forall X0. (l3\_osalg\_1 X0) \Rightarrow ((l1\_osalg\_1 X0) \wedge (l2\_osalg\_1 X0)) \tag{4}$$

Assume the following.

$$\forall X0. m1\_finseq\_2 (k3\_finseq\_2 X0) X0 \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 \\ & X0) \wedge ((v4\_osalg\_1 X0) \wedge ((v5\_osalg\_1 X0) \wedge ((v8\_osalg\_1 X0) \wedge ((v10\_osalg\_1 \\ & X0) \wedge (l3\_osalg\_1 X0)))))) \wedge ((m1\_subset\_1 X1 (u4\_struct\_0 X0)) \wedge \\ & (m1\_subset\_1 X2 (k3\_finseq\_2 (u1\_struct\_0 X0)))))) \Rightarrow (m1\_subset\_1 \\ & (k2\_osalg\_1 X0 X1 X2) (u4\_struct\_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 X0) \wedge ((v4\_osalg\_1 \\ & X0) \wedge ((v5\_osalg\_1 X0) \wedge (l3\_osalg\_1 X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u4\_struct\_0 \\ & X0)) \Rightarrow (\forall X3. (m2\_finseq\_2 X3 (u1\_struct\_0 X0) (k3\_finseq\_2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r3\_osalg\_1 X0 X1 X2 X3) \Leftrightarrow ((r1\_osalg\_1 X0 X1 \\ & X2) \wedge ((r2\_osalg\_1 X0 X3 (k1\_msualg\_1 X0 X2)) \wedge (\forall X4. (m1\_subset\_1 \\ & X4 (u4\_struct\_0 X0)) \Rightarrow (((r1\_osalg\_1 X0 X1 X4) \wedge (r2\_osalg\_1 X0 X3 \\ & (k1\_msualg\_1 X0 X4)) \Rightarrow (r2\_osalg\_1 X0 (k1\_msualg\_1 X0 X2) (k1\_msualg\_1 \\ & X0 X4)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 X0) \wedge ((v4\_osalg\_1 \\ & X0) \wedge ((v5\_osalg\_1 X0) \wedge ((v8\_osalg\_1 X0) \wedge ((v10\_osalg\_1 X0) \wedge (l3\_osalg\_1 \\ & X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m2\_finseq\_2 X2 (u1\_struct\_0 X0) (k3\_finseq\_2 (u1\_struct\_0 X0)) \Rightarrow \\ & ((r2\_osalg\_1 X0 X2 (k1\_msualg\_1 X0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 \\ & X3 (u4\_struct\_0 X0)) \Rightarrow ((X3 = k2\_osalg\_1 X0 X1 X2) \Leftrightarrow (r3\_osalg\_1 X0 \\ & X1 X3 X2)))))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 X0) \wedge ((v4\_osalg\_1 \\ & X0) \wedge ((v5\_osalg\_1 X0) \wedge ((v8\_osalg\_1 X0) \wedge ((v10\_osalg\_1 X0) \wedge (l3\_osalg\_1 \\ & X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u4\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u4\_struct\_0 X0)) \Rightarrow (\forall X3. (m2\_finseq\_2 X3 \\ & (u1\_struct\_0 X0) (k3\_finseq\_2 (u1\_struct\_0 X0)) \Rightarrow (((r1\_osalg\_1 \\ & X0 X1 X2) \wedge ((r2\_osalg\_1 X0 X3 (k1\_msualg\_1 X0 X1)) \wedge (r2\_osalg\_1 X0 \\ & X3 (k1\_msualg\_1 X0 X2))) \Rightarrow (k2\_osalg\_1 X0 X1 X3 = k2\_osalg\_1 X0 X2 \\ & X3)))))) \end{aligned}$$