

## t36\_msualg\_6

(TMJaNJq9EFMAqBLvsNxrgeKv3f2K9tuSDJf)

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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  $v4\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_msualg\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 \\ & X0) \wedge (l1\_msualg\_1 X0))) \wedge (((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 \\ & X0)) \wedge (m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1))) \Rightarrow ((v3\_msualg\_6 (k8\_msualg\_6 X0 X1 X2) X0 X1) \wedge ((v4\_msualg\_6 \\ & (k8\_msualg\_6 X0 X1 X2) X0 X1) \wedge (m1\_msualg\_4 (k8\_msualg\_6 X0 X1 X2) \\ & (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 \\ & X0) \wedge (l1\_msualg\_1 X0))) \wedge (((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 \\ & X0)) \wedge (m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1))) \Rightarrow ((v4\_msualg\_6 (k7\_msualg\_6 X0 X1 X2) X0 X1) \wedge (m1\_msualg\_4 \\ & (k7\_msualg\_6 X0 X1 X2) (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (\neg v11\_struct\_0 \\ & X0) \wedge (l1\_msualg\_1 X0))) \wedge (((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 \\ & X0)) \wedge (m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1))) \Rightarrow ((v3\_msualg\_6 (k6\_msualg\_6 X0 X1 X2) X0 X1) \wedge (m1\_msualg\_4 \\ & (k6\_msualg\_6 X0 X1 X2) (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) \\
& (u3\_msualg\_1 X0 X1)) \Rightarrow (\forall X3.((v3\_msualg\_6 X3 X0 X1) \wedge ((v4\_msualg\_6 \\
& X3 X0 X1) \wedge (m1\_msualg\_4 X3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) ( \\
& u3\_msualg\_1 X0 X1)))) \Rightarrow ((X3 = k8\_msualg\_6 X0 X1 X2) \Leftrightarrow ((r2\_pboole \\
& (u1\_struct\_0 X0) X2 X3) \wedge (\forall X4.((v3\_msualg\_6 X4 X0 X1) \wedge (( \\
& v4\_msualg\_6 X4 X0 X1) \wedge (m1\_msualg\_4 X4 (u1\_struct\_0 X0) (u3\_msualg\_1 \\
& X0 X1) (u3\_msualg\_1 X0 X1)))) \Rightarrow ((r2\_pboole (u1\_struct\_0 X0) X2 X4) \Rightarrow \\
& (r2\_pboole (u1\_struct\_0 X0) X3 X4)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) \\
& (u3\_msualg\_1 X0 X1)) \Rightarrow (\forall X3.((v4\_msualg\_6 X3 X0 X1) \wedge (m1\_msualg\_4 \\
& X3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1))) \Rightarrow ( \\
& (X3 = k7\_msualg\_6 X0 X1 X2) \Leftrightarrow ((r2\_pboole (u1\_struct\_0 X0) X2 X3) \wedge \\
& (\forall X4.((v4\_msualg\_6 X4 X0 X1) \wedge (m1\_msualg\_4 X4 (u1\_struct\_0 \\
& X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1))) \Rightarrow ((r2\_pboole (u1\_struct\_0 \\
& X0) X2 X4) \Rightarrow (r2\_pboole (u1\_struct\_0 X0) X3 X4)))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) \\
& (u3\_msualg\_1 X0 X1)) \Rightarrow (\forall X3.((v3\_msualg\_6 X3 X0 X1) \wedge (m1\_msualg\_4 \\
& X3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1))) \Rightarrow ( \\
& (X3 = k6\_msualg\_6 X0 X1 X2) \Leftrightarrow ((r2\_pboole (u1\_struct\_0 X0) X2 X3) \wedge \\
& (\forall X4.((v3\_msualg\_6 X4 X0 X1) \wedge (m1\_msualg\_4 X4 (u1\_struct\_0 \\
& X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1))) \Rightarrow ((r2\_pboole (u1\_struct\_0 \\
& X0) X2 X4) \Rightarrow (r2\_pboole (u1\_struct\_0 X0) X3 X4)))))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1\_msualg\_4 X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) \\
& (u3\_msualg\_1 X0 X1)) \Rightarrow ((r2\_pboole (u1\_struct\_0 X0) (k7\_msualg\_6 \\
& X0 X1 X2) (k8\_msualg\_6 X0 X1 X2)) \wedge ((r2\_pboole (u1\_struct\_0 X0) ( \\
& k6\_msualg\_6 X0 X1 X2) (k8\_msualg\_6 X0 X1 X2)) \wedge (r2\_pboole (u1\_struct\_0 \\
& X0) (k7\_msualg\_6 X0 X1 (k6\_msualg\_6 X0 X1 X2)) (k8\_msualg\_6 X0 X1 \\
& X2)))))))))
\end{aligned}$$