

# t22\_msualg\_6

(TMQ3y8CFKeo4kkCXRjADqzFyp3tViv2ftcB)

October 27, 2020

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  $m1\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\
& X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
& (\forall X2.((v4\_msualg\_1 X2 X0) \wedge (l3\_msualg\_1 X2 X0)) \Rightarrow (\forall X3. \\
& (m2\_pboole X3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\
& X0 X2)) \Rightarrow ((r1\_msualg\_3 X0 X1 X2 X3) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (X5 \in k4\_finseq\_1 (k1\_msualg\_1 X0 X4)) \Rightarrow (\forall X6.(m1\_subset\_1 \\
& X6 (k3\_msualg\_1 X0 X4 X1)) \Rightarrow (k3\_relat\_1 (k4\_msualg\_6 X0 X4 X5 X1 X6) \\
& (k1\_msualg\_3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\
& X0 X2) X3 (k2\_msualg\_1 X0 X4)) = k3\_relat\_1 (k1\_msualg\_3 (u1\_struct\_0 \\
& X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X2) X3 (k7\_partfun1 (u1\_struct\_0 \\
& X0) (k1\_msualg\_1 X0 X4) X5)) (k4\_msualg\_6 X0 X4 X5 X2 (k5\_msualg\_3 \\
& X0 X1 X2 X4 X3 X6)))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge \\
& (l1\_msualg\_1 X0))) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow (\forall X2.(m1\_msualg\_6 \\
& X2 X0 X1) \Rightarrow (m2\_pboole X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\
& X0 X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\ & \quad X0))) \Rightarrow (\forall X1.(l3\_msualg\_1 X1 X0) \Rightarrow (\forall X2.(m2\_pboole \\ & X2 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1)) \Rightarrow (( \\ & \quad m1\_msualg\_6 X2 X0 X1) \Leftrightarrow (r1\_msualg\_3 X0 X1 X1 X2)))) \end{aligned} \quad (3)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\ & X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\ & \quad (\forall X2.(m1\_msualg\_6 X2 X0 X1) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & \quad (u4\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 k5\_numbers) \Rightarrow ( \\ & \quad (X4 \in k4\_finseq\_1 (k1\_msualg\_1 X0 X3)) \Rightarrow (\forall X5.(m1\_subset\_1 \\ & X5 (k3\_msualg\_1 X0 X3 X1)) \Rightarrow (k3\_relat\_1 (k4\_msualg\_6 X0 X3 X4 X1 X5) \\ & \quad (k1\_msualg\_3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 \\ & X0 X1) X2 (k2\_msualg\_1 X0 X3)) = k3\_relat\_1 (k1\_msualg\_3 (u1\_struct\_0 \\ & X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1) X2 (k7\_partfun1 (u1\_struct\_0 \\ & X0) (k1\_msualg\_1 X0 X3) X4)) (k4\_msualg\_6 X0 X3 X4 X1 (k5\_msualg\_3 \\ & \quad X0 X1 X1 X3 X2 X5)))))))))) \end{aligned}$$