

## t24\_msualg\_6

(TMT5866ciUpL6WmmCS31v3fbLzQp1Ged2U4)

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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  $m1\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_msualg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 X0))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\
 & (\forall X2.((v4\_msualg\_1 X2 X0) \wedge (l3\_msualg\_1 X2 X0)) \Rightarrow (\forall X3. \\
 & (m2\_pboole X3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X2)) \Rightarrow ((r1\_msualg\_3 X0 X1 X2 X3) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
 & (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow \\
 & (\forall X6.((v1\_relat\_1 X6) \wedge (v1\_funct\_1 X6)) \Rightarrow (\neg (r1\_msualg\_6 X0 X4 X5 X1 X6) \wedge (\forall X7.((v1\_funct\_1 X7) \wedge ((v1\_funct\_2 X7 (k1\_funct\_1 \\
 & (u3\_msualg\_1 X0 X2) X4) (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X5)) \wedge (m1\_subset\_1 X7 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X4) \\
 & (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X5)))))) \Rightarrow (\neg (r1\_msualg\_6 X0 X4 X5 X2 X7) \wedge (k1\_partfun1 (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X4) (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X4) (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X4) (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X4) (k1\_funct\_1 (u3\_msualg\_1 X0 X2) X5) (k1\_msualg\_3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X2) X3 X4) X7 = k3\_relat\_1 X6 (k1\_msualg\_3 (u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X2) X3 X5))))))))))))) \\
 & (1)
 \end{aligned}$$

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.

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

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge (l1\_msualg\_1 \\ & X0))) \Rightarrow (\forall X1. ((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow \\ & (\forall X2. (m1\_msualg\_6 X2 X0 X1) \Rightarrow (\forall X3. (m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X5. ((v1\_relat\_1 X5) \wedge (v1\_funct\_1 X5)) \Rightarrow (\neg (r1\_msualg\_6 \\ & X0 X3 X4 X1 X5) \wedge (\forall X6. ((v1\_funct\_1 X6) \wedge ((v1\_funct\_2 X6 (k1\_funct\_1 \\ & (u3\_msualg\_1 X0 X1) X3) (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X4)) \wedge (m1\_subset\_1 \\ & X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X3) \\ & (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X4)))))) \Rightarrow (\neg (r1\_msualg\_6 X0 X3 \\ & X4 X1 X6) \wedge (k1\_partfun1 (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X3) (k1\_funct\_1 \\ & (u3\_msualg\_1 X0 X1) X3) (k1\_funct\_1 (u3\_msualg\_1 X0 X1) X3) (k1\_funct\_1 \\ & (u3\_msualg\_1 X0 X1) X4) (k1\_msualg\_3 (u1\_struct\_0 X0) (u3\_msualg\_1 \\ & X0 X1) (u3\_msualg\_1 X0 X1) X2 X3) X6 = k3\_relat\_1 X5 (k1\_msualg\_3 ( \\ & u1\_struct\_0 X0) (u3\_msualg\_1 X0 X1) (u3\_msualg\_1 X0 X1) X2 X4)))))))))) \end{aligned}$$