

## t20\_mssublat

(TMSr9E9uivcbWiiVeLG4c9XaAATYhZnmBxn)

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Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $v5\_msualg\_1 : \iota \Rightarrow o$  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  $m1\_msualg\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_unialg\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_unialg\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_unialg\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_unialg\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l5\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v2\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v3\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v4\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $l1\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v11\_struct\_0 X0) \wedge ((v13\_struct\_0 X0 np\_1) \wedge ((v5\_msualg\_1 \\
 & X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 \\
 & X1 X0)) \Rightarrow (\forall X2.((v4\_msualg\_1 X2 X0) \wedge (m1\_msualg\_2 X2 X0 X1)) \Rightarrow \\
 & (\forall X3.((\neg v1\_xboole\_0 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
 & (u1\_struct\_0 (k12\_msualg\_1 X0 X1)))))) \Rightarrow ((X3 = u1\_struct\_0 (k12\_msualg\_1 \\
 & X0 X2)) \Rightarrow (u1\_unialg\_1 (k12\_msualg\_1 X0 X2) = k3\_unialg\_2 (k12\_msualg\_1 \\
 & X0 X1) X3))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v11\_struct\_0 X0) \wedge ((v13\_struct\_0 X0 np\_1) \wedge ((v5\_msualg\_1 \\
 & X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 \\
 & X1 X0)) \Rightarrow (\forall X2.((v4\_msualg\_1 X2 X0) \wedge (m1\_msualg\_2 X2 X0 X1)) \Rightarrow \\
 & (\forall X3.((\neg v1\_xboole\_0 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
 & (u1\_struct\_0 (k12\_msualg\_1 X0 X1)))))) \Rightarrow ((X3 = u1\_struct\_0 (k12\_msualg\_1 \\
 & X0 X2)) \Rightarrow (v1\_unialg\_2 X3 (k12\_msualg\_1 X0 X1))))))
 \end{aligned}
 \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v11\_struct\_0 X0) \wedge ((v13\_struct\_0 X0 \ np\_1) \wedge ((v5\_msualg\_1 \\ X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 \\ X1 X0)) \Rightarrow (\forall X2.((v4\_msualg\_1 X2 X0) \wedge (m1\_msualg\_2 X2 X0 X1)) \Rightarrow \\ (m1\_subset\_1 (u1\_struct\_0 (k12\_msualg\_1 X0 X2)) (k1\_zfmisc\_1 \\ (u1\_struct\_0 (k12\_msualg\_1 X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((\neg v11\_struct\_0 X0) \wedge \\ (l1\_msualg\_1 X0))) \wedge (l3\_msualg\_1 X1 X0)) \Rightarrow (\forall X2. (m1\_msualg\_2 \\ X2 X0 X1) \Rightarrow (l3\_msualg\_1 X2 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. (l5\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. (l1\_msualg\_1 X0) \Rightarrow (l5\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v11\_struct\_0 X0) \wedge ((v13\_struct\_0 X0 \\ np\_1) \wedge ((v5\_msualg\_1 X0) \wedge (l1\_msualg\_1 X0)))) \wedge ((v4\_msualg\_1 \\ X1 X0) \wedge (l3\_msualg\_1 X1 X0))) \Rightarrow ((\neg v2\_struct\_0 (k12\_msualg\_1 X0 \\ X1)) \wedge ((v1\_unialg\_1 (k12\_msualg\_1 X0 X1)) \wedge ((v2\_unialg\_1 (k12\_msualg\_1 \\ X0 X1)) \wedge ((v3\_unialg\_1 (k12\_msualg\_1 X0 X1)) \wedge ((v4\_unialg\_1 (k12\_msualg\_1 \\ X0 X1)) \wedge (l1\_unialg\_1 (k12\_msualg\_1 X0 X1))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1. ((\neg \\ v2\_struct\_0 X1) \wedge ((v2\_unialg\_1 X1) \wedge ((v3\_unialg\_1 X1) \wedge ((v4\_unialg\_1 \\ X1) \wedge (l1\_unialg\_1 X1)))))) \Rightarrow ((m1\_unialg\_2 X1 X0) \Leftrightarrow ((m1\_subset\_1 \\ (u1\_struct\_0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge (\forall X2. \\ ((\neg v1\_xboole\_0 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0)))) \Rightarrow ((X2 = u1\_struct\_0 X1) \Rightarrow ((u1\_unialg\_1 X1 = k3\_unialg\_2 X0 \\ X2) \wedge (v1\_unialg\_2 X2 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (l1\_struct\_0 X0) \Rightarrow ((v13\_struct\_0 X0 \ np\_1) \Rightarrow ((\neg v2\_struct\_0 \\ X0) \wedge (v7\_struct\_0 X0))) \quad (9)$$

### Theorem 1

$$\begin{aligned} \forall X0. ((\neg v11\_struct\_0 X0) \wedge ((v13\_struct\_0 X0 \ np\_1) \wedge ((v5\_msualg\_1 \\ X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1. ((v4\_msualg\_1 X1 X0) \wedge (l3\_msualg\_1 \\ X1 X0)) \Rightarrow (\forall X2. ((v4\_msualg\_1 X2 X0) \wedge (m1\_msualg\_2 X2 X0 X1)) \Rightarrow \\ (m1\_unialg\_2 (k12\_msualg\_1 X0 X2) (k12\_msualg\_1 X0 X1)))) \end{aligned}$$