

## t3\_sf\_mastr

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Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmf\_sa\_2 : \iota$  be given. Let  $k8\_scmf\_sa\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_ami\_3 : \iota$  be given. Let  $k4\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 \\ & X2) \wedge (v1\_finseq\_1 X2))) \Rightarrow ((X2 = k10\_finseq\_1 X0 X1) \Leftrightarrow ((k3\_finseq\_1 \\ & X2 = np\_2) \wedge ((k1\_funct\_1 X2 np\_1 = X0) \wedge (k1\_funct\_1 X2 np\_2 = X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (k3\_xtuple\_0 X0 X1 X2 = k3\_xtuple\_0 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge \\ & (X2 = X5))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k10\_finseq\_1 X0 X1)) \wedge (v1\_funct\_1 (k10\_finseq\_1 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. v1\_finseq\_1 (k10\_finseq\_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 \\ & k1\_scmf\_sa\_2))) \wedge ((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\ & k1\_scmf\_sa\_2)))) \Rightarrow (m1\_subset\_1 (k8\_scmf\_sa\_2 X0 X1) (u1\_compos\_1 \\ & k1\_scmf\_sa\_2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow \\
& (\forall X1.((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_ami\_3))) \Rightarrow \\
& (k4\_ami\_3 X0 X1 = k3\_xtuple\_0 np\_3 k1\_xboole\_0 (k10\_finseq\_1 X0 \\
& X1))) \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& (\forall X1.((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_compos\_1 k1\_scmf\_sa\_2)) \Rightarrow ((X2 = \\
& k8\_scmf\_sa\_2 X0 X1) \Leftrightarrow (\exists X3.((v1\_ami\_2 X3) \wedge (m1\_subset\_1 X3 \\
& (u1\_struct\_0 k1\_ami\_3)))) \wedge (\exists X4.((v1\_ami\_2 X4) \wedge (m1\_subset\_1 \\
& X4 (u1\_struct\_0 k1\_ami\_3)))) \wedge ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k4\_ami\_3 \\
& X3 X4)))))) \tag{7}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& (\forall X1.((v1\_ami\_2 X1) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& (\forall X2.((v1\_ami\_2 X2) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& (\forall X3.((v1\_ami\_2 X3) \wedge (m1\_subset\_1 X3 (u1\_struct\_0 k1\_scmf\_sa\_2))) \Rightarrow \\
& ((k8\_scmf\_sa\_2 X0 X1 = k8\_scmf\_sa\_2 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))))))
\end{aligned}$$