

t7\_alg\_1 (TM-  
RxqiU4wJTWPD0MEAGLeohVmCEDtczrcBJ)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r4\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r2\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_alg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ & v2\_struct\_0 X1) \wedge ((v2\_unialg\_1 X1) \wedge ((v3\_unialg\_1 X1) \wedge ((v4\_unialg\_1 \\ & X1) \wedge (l1\_unialg\_1 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((r4\_alg\_1 \\ & X0 X1 X2) \Leftrightarrow ((r2\_alg\_1 X0 X1 X2) \wedge (r3\_alg\_1 X0 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ & v2\_struct\_0 X1) \wedge ((v2\_unialg\_1 X1) \wedge ((v3\_unialg\_1 X1) \wedge ((v4\_unialg\_1 \\ & X1) \wedge (l1\_unialg\_1 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((r3\_alg\_1 \\ & X0 X1 X2) \Leftrightarrow ((r1\_alg\_1 X0 X1 X2) \wedge (k2\_relset\_1 (u1\_struct\_0 X1) X2 = \\ & u1\_struct\_0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\
& \quad X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v2\_unialg\_1 X1) \wedge ((v3\_unialg\_1 X1) \wedge ((v4\_unialg\_1 \\
& \quad X1) \wedge (l1\_unialg\_1 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((r2\_alg\_1 \\
& \quad X0 X1 X2) \Leftrightarrow ((r1\_alg\_1 X0 X1 X2) \wedge (v2\_funct\_1 X2))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\
& \quad X0) \wedge ((v4\_unialg\_1 X0) \wedge (l1\_unialg\_1 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v2\_unialg\_1 X1) \wedge ((v3\_unialg\_1 X1) \wedge ((v4\_unialg\_1 \\
& \quad X1) \wedge (l1\_unialg\_1 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((r4\_alg\_1 \\
& X0 X1 X2) \Leftrightarrow ((r1\_alg\_1 X0 X1 X2) \wedge ((k2\_relset\_1 (u1\_struct\_0 X1) X2 = \\
& \quad u1\_struct\_0 X1) \wedge (v2\_funct\_1 X2))))))
\end{aligned}$$