

## t23\_reaset3

(TMammWHThj16LGjg8rnMvkxttH9udjzWS1T)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_realset3 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_realset2 : \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_realset2 : \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
 & ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & (m2\_subset\_1 X1 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (\forall X2. \\
 & (m2\_subset\_1 X2 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (k1\_funct\_1 \\
 & (k5\_realset2 X0) (k1\_binop\_1 (k4\_realset2 X0) X1 (k3\_funct\_2 ( \\
 & k8\_struct\_0 X0) (k8\_struct\_0 X0) (k5\_realset2 X0) X2)) = k1\_binop\_1 \\
 & (k4\_realset2 X0) X2 (k3\_funct\_2 (k8\_struct\_0 X0) (k8\_struct\_0 \\
 & X0) (k5\_realset2 X0) X1))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0 X0)\wedge(l2\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (k8\_struct\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Rightarrow(m1\_subset\_1 X2 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0)\Rightarrow((l4\_algstr\_0 X0)\wedge(l4\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l3\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k8\_struct\_0 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ X0)\wedge((v33\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge \\ ((v4\_rlvect\_1 X0)\wedge((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 \\ X0)\wedge((v5\_vectsp\_1 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow((v1\_funct\_1 \\ (k2\_realset3 X0))\wedge((v1\_funct\_2 (k2\_realset3 X0) (k2\_zfmisc\_1 \\ (u1\_struct\_0 X0) (k8\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 \\ (k2\_realset3 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ X0) (k8\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) \\
& (k8\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \\
& (u1\_struct\_0 X0)))))) \Rightarrow ((X1 = k2\_realset3 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (u1\_struct\_0 \\
& X0) (k8\_struct\_0 X0)) \Rightarrow (k2\_binop\_1 (u1\_struct\_0 X0) (k8\_struct\_0 \\
& X0) (u1\_struct\_0 X0) X1 X2 X3 = k1\_binop\_1 (k4\_realset2 X0) X2 (k3\_funct\_2 \\
& (k8\_struct\_0 X0) (k8\_struct\_0 X0) (k5\_realset2 X0) X3))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0) \Rightarrow ((\neg v6\_struct\_0 X0) \Rightarrow (\neg v7\_struct\_0 X0)) \tag{12}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& (m2\_subset\_1 X1 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m2\_subset\_1 X2 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (k2\_binop\_1 \\
& (u1\_struct\_0 X0) (k8\_struct\_0 X0) (u1\_struct\_0 X0) (k2\_realset3 \\
& X0) X1 X2 = k1\_funct\_1 (k5\_realset2 X0) (k2\_binop\_1 (u1\_struct\_0 \\
& X0) (k8\_struct\_0 X0) (u1\_struct\_0 X0) (k2\_realset3 X0) X2 X1))))
\end{aligned}$$