

## t13\_ncfcont2

(TMN8ZSbD7GXQ1aqmLtTwFszpNSM5rjCQtcj)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  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  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_ncfcont2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_vfunct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k6\_complex1 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\
 & ((v13\_algstr\_0 X1) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 \\
 & X1) \wedge (v3\_normsp\_0 X1) \wedge (v4\_normsp\_0 X1) \wedge (v2\_clvect\_1 X1) \wedge \\
 & ((v3\_clvect\_1 X1) \wedge (v4\_clvect\_1 X1) \wedge (v5\_clvect\_1 X1) \wedge (v8\_clvect\_1 \\
 & X1) \wedge (l2\_clvect\_1 X1)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
 & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\
 & X1)))) \Rightarrow (r2\_relset\_1 X0 (u1\_struct\_0 X1) (k5\_vfunct\_1 X0 X1 X2) \\
 & (k2\_vfunct\_2 X0 X1 X2 (k10\_complex1 k6\_complex1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\
& X2) \wedge ((v13\_algstr\_0 X2) \wedge (v2\_rlvect\_1 X2) \wedge (v3\_rlvect\_1 X2) \wedge \\
& ((v4\_rlvect\_1 X2) \wedge (v3\_normsp\_0 X2) \wedge (v4\_normsp\_0 X2) \wedge (v2\_clvect\_1 \\
& X2) \wedge (v3\_clvect\_1 X2) \wedge (v4\_clvect\_1 X2) \wedge (v5\_clvect\_1 X2) \wedge \\
& ((v8\_clvect\_1 X2) \wedge (l2\_clvect\_1 X2)))))) \Rightarrow (\forall X3. \\
& ((\neg v2\_struct\_0 X3) \wedge ((v13\_algstr\_0 X3) \wedge (v2\_rlvect\_1 X3) \wedge ( \\
& v3\_rlvect\_1 X3) \wedge (v4\_rlvect\_1 X3) \wedge (v3\_normsp\_0 X3) \wedge (v4\_normsp\_0 \\
& X3) \wedge (v2\_clvect\_1 X3) \wedge (v3\_clvect\_1 X3) \wedge (v4\_clvect\_1 X3) \wedge \\
& ((v5\_clvect\_1 X3) \wedge (v8\_clvect\_1 X3) \wedge (l2\_clvect\_1 X3)))))) \Rightarrow \\
& (\forall X4. ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X2) (u1\_struct\_0 X3)))))) \Rightarrow ((r1\_ncfcont2 X0 X2 X3 X4) \Rightarrow \\
& (r1\_ncfcont2 X0 X2 X3 (k2\_vfunct\_2 (u1\_struct\_0 X2) X3 X4 X1))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k2\_numbers) \Rightarrow (k10\_complex1 X0 = k4\_xcmplx\_0 X0) \tag{4}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{5}$$

Assume the following.

$$v1\_membered k2\_numbers \tag{6}$$

Assume the following.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \tag{7}$$

Assume the following.

$$\forall X0. (l2\_normsp\_0 X0) \Rightarrow ((l1\_normsp\_0 X0) \wedge (l2\_struct\_0 X0)) \tag{8}$$

Assume the following.

$$\forall X0. (l2\_clvect\_1 X0) \Rightarrow ((l1\_clvect\_1 X0) \wedge (l2\_normsp\_0 X0)) \tag{9}$$

Assume the following.

$$\forall X0. (l1\_clvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \tag{10}$$

Assume the following.

$$m1\_subset\_1 \ k6\_complex1 \ k2\_numbers \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 \ X0) \wedge (((\neg v2\_struct\_0 \\ & X1) \wedge (l2\_algstr\_0 \ X1)) \wedge ((v1\_funct\_1 \ X2) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ (u1\_struct\_0 \ X1))))))) \Rightarrow ((v1\_funct\_1 \ (k5\_vfunct\_1 \\ & X0 \ X1 \ X2)) \wedge (m1\_subset\_1 \ (k5\_vfunct\_1 \ X0 \ X1 \ X2) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & X0 \ (u1\_struct\_0 \ X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 \ X0) \Rightarrow (v1\_xcmplx\_0 \ (k4\_xcmplx\_0 \ X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 \ X0) \wedge \\ & (((\neg v2\_struct\_0 \ X1) \wedge ((v13\_algstr\_0 \ X1) \wedge ((v2\_rlvect\_1 \ X1) \wedge \\ & (v3\_rlvect\_1 \ X1) \wedge ((v4\_rlvect\_1 \ X1) \wedge ((v3\_normsp\_0 \ X1) \wedge ((v4\_normsp\_0 \\ & X1) \wedge ((v2\_clvect\_1 \ X1) \wedge ((v3\_clvect\_1 \ X1) \wedge ((v4\_clvect\_1 \ X1) \wedge \\ & ((v5\_clvect\_1 \ X1) \wedge ((v8\_clvect\_1 \ X1) \wedge (l2\_clvect\_1 \ X1)))))))))) \wedge \\ & (((v1\_funct\_1 \ X2) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & X0 \ (u1\_struct\_0 \ X1)))))) \wedge (v1\_xcmplx\_0 \ X3))) \Rightarrow ((v1\_funct\_1 \ (k2\_vfunct\_2 \\ & X0 \ X1 \ X2 \ X3)) \wedge (m1\_subset\_1 \ (k2\_vfunct\_2 \ X0 \ X1 \ X2 \ X3) \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ (u1\_struct\_0 \ X1)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. (v1\_membered \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ X0) \Rightarrow (v1\_xcmplx\_0 \ X1)) \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 \ X1) \wedge ((v13\_algstr\_0 \ X1) \wedge \\ & ((v2\_rlvect\_1 \ X1) \wedge ((v3\_rlvect\_1 \ X1) \wedge ((v4\_rlvect\_1 \ X1) \wedge ((v3\_normsp\_0 \\ & X1) \wedge ((v4\_normsp\_0 \ X1) \wedge ((v2\_clvect\_1 \ X1) \wedge ((v3\_clvect\_1 \ X1) \wedge \\ & ((v4\_clvect\_1 \ X1) \wedge ((v5\_clvect\_1 \ X1) \wedge ((v8\_clvect\_1 \ X1) \wedge (l2\_clvect\_1 \\ & X1)))))))))) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \ X2) \wedge ((v13\_algstr\_0 \\ & X2) \wedge ((v2\_rlvect\_1 \ X2) \wedge ((v3\_rlvect\_1 \ X2) \wedge ((v4\_rlvect\_1 \ X2) \wedge \\ & ((v3\_normsp\_0 \ X2) \wedge ((v4\_normsp\_0 \ X2) \wedge ((v2\_clvect\_1 \ X2) \wedge ((v3\_clvect\_1 \\ & X2) \wedge ((v4\_clvect\_1 \ X2) \wedge ((v5\_clvect\_1 \ X2) \wedge ((v8\_clvect\_1 \ X2) \wedge \\ & (l2\_clvect\_1 \ X2)))))))))) \Rightarrow (\forall X3. ((v1\_funct\_1 \ X3) \wedge \\ & (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ X1) \ (u1\_struct\_0 \\ & X2)))))) \Rightarrow ((r1\_ncfcont2 \ X0 \ X1 \ X2 \ X3) \Rightarrow (r1\_ncfcont2 \ X0 \ X1 \ X2 \ (k5\_vfunct\_1 \\ & (u1\_struct\_0 \ X1) \ X2 \ X3)))))) \end{aligned}$$