

## t37\_ncfcont1

(TMWC3Bp2oxf2XQggBgmRuoRAhkKMn7MdLeL)

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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  $v5\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v2\_normsp.1 : \iota \Rightarrow o$  be given. Let  $l1\_normsp.1 : \iota \Rightarrow o$  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  $v1\_xcmplx.0 : \iota \Rightarrow o$  be given. Let  $r3\_ncfcont1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_vfunct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_clvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v9\_clvect.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_clvect.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_clvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $l1\_struct.0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  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  $l1\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $v5\_relat.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_normsp.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_normsp.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let

$v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\
& ((v4\_normsp\_0 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\
& X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge (l2\_clvect\_1 X0)))))))))) \Rightarrow \\
& (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge \\
& ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 \\
& X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 \\
& X3) \wedge ((v1\_funct\_2 X3 k5\_numbers (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X1)))))) \Rightarrow \\
& (\forall X4. (v1\_xcmplx\_0 X4) \Rightarrow ((r1\_tarski (k2\_relset\_1 (u1\_struct\_0 \\
& X1) X3) (k1\_relset\_1 (u1\_struct\_0 X1) X2)) \Rightarrow (r2\_funct\_2 k5\_numbers \\
& (u1\_struct\_0 X0) (k8\_funct\_2 k5\_numbers (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) X3 (k2\_vfunct\_2 (u1\_struct\_0 X1) X0 X2 X4)) (k6\_clvect\_1 X0 ( \\
& k8\_funct\_2 k5\_numbers (u1\_struct\_0 X0) (u1\_struct\_0 X1) X3 X2) \\
& X4))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\
& ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\
& X1) \wedge ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_clvect\_1 X1) \wedge \\
& ((v3\_clvect\_1 X1) \wedge ((v4\_clvect\_1 X1) \wedge ((v5\_clvect\_1 X1) \wedge ((v8\_clvect\_1 \\
& X1) \wedge (l2\_clvect\_1 X1)))))))))) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X1)))))) \Rightarrow \\
& ((v9\_clvect\_1 X2 X1) \Rightarrow (k7\_clvect\_1 X1 (k6\_clvect\_1 X1 X2 X0) = k1\_clvect\_1 \\
& X1 (k7\_clvect\_1 X1 X2) X0)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\
& ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\
& X1) \wedge ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_clvect\_1 X1) \wedge \\
& ((v3\_clvect\_1 X1) \wedge ((v4\_clvect\_1 X1) \wedge ((v5\_clvect\_1 X1) \wedge ((v8\_clvect\_1 \\
& X1) \wedge (l2\_clvect\_1 X1)))))))))) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X1)))))) \Rightarrow \\
& ((v9\_clvect\_1 X2 X1) \Rightarrow (v9\_clvect\_1 (k6\_clvect\_1 X1 X2 X0) X1)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 \\ (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l2\_normsp\_0 X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\ & X2)\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X2)\wedge(m1\_subset\_1 X3 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))\wedge((v1\_relat\_1 X4)\wedge((v5\_relat\_1 \\ & X4 X1)\wedge(v1\_funct\_1 X4))))\Rightarrow((v1\_funct\_1 (k8\_funct\_2 X0 X1 X2 X3 \\ & X4))\wedge((v1\_funct\_2 (k8\_funct\_2 X0 X1 X2 X3 X4) X0 X1)\wedge(m1\_subset\_1 \\ & (k8\_funct\_2 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ & ((v2\_clvect\_1 X0)\wedge((v3\_clvect\_1 X0)\wedge((v4\_clvect\_1 X0)\wedge((v5\_clvect\_1 \\ & X0)\wedge(l1\_clvect\_1 X0))))))))))\wedge(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 \\ & X1 k5\_numbers (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0))))))\wedge(v1\_xcmplx\_0 \\ & X2))\Rightarrow((v1\_funct\_1 (k6\_clvect\_1 X0 X1 X2))\wedge((v1\_funct\_2 (k6\_clvect\_1 \\ & X0 X1 X2) k5\_numbers (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (k6\_clvect\_1 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge \\
& (v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 \\
& X1) \wedge ((v2\_clvect\_1 X1) \wedge ((v3\_clvect\_1 X1) \wedge ((v4\_clvect\_1 X1) \wedge \\
& ((v5\_clvect\_1 X1) \wedge ((v8\_clvect\_1 X1) \wedge (l2\_clvect\_1 X1)))))))))) \wedge \\
& (((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 (u1\_struct\_0 X1)))) \wedge (v1\_xcmplx\_0 X3))) \Rightarrow ((v1\_funct\_1 (k2\_vfunct\_2 \\
& X0 X1 X2 X3)) \wedge (m1\_subset\_1 (k2\_vfunct\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\
& X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \Rightarrow \\
& (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge \\
& ((v4\_normsp\_0 X1) \wedge ((v2\_clvect\_1 X1) \wedge ((v3\_clvect\_1 X1) \wedge ((v4\_clvect\_1 \\
& X1) \wedge ((v5\_clvect\_1 X1) \wedge ((v8\_clvect\_1 X1) \wedge (l2\_clvect\_1 X1)))))))))) \Rightarrow \\
& (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X3. (m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow ((r3\_ncfcont1 X0 X1 X2 X3) \Leftrightarrow ((X3 \in k1\_relset\_1 \\
& (u1\_struct\_0 X0) X2) \wedge (\forall X4. ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& X4 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow (((r1\_tarski \\
& (k2\_relset\_1 (u1\_struct\_0 X0) X4) (k1\_relset\_1 (u1\_struct\_0 X0) \\
& X2)) \wedge ((v3\_normsp\_1 X4 X0) \wedge (k6\_normsp\_1 X0 X4 = X3))) \Rightarrow ((v9\_clvect\_1 \\
& (k8\_funct\_2 k5\_numbers (u1\_struct\_0 X1) (u1\_struct\_0 X0) X4 X2) \\
& X1) \wedge (k7\_partfun1 (u1\_struct\_0 X1) X2 X3 = k7\_clvect\_1 X1 (k8\_funct\_2 \\
& k5\_numbers (u1\_struct\_0 X1) (u1\_struct\_0 X0) X4 X2))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\
& X1) \wedge ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_clvect\_1 X1) \wedge \\
& ((v3\_clvect\_1 X1) \wedge ((v4\_clvect\_1 X1) \wedge ((v5\_clvect\_1 X1) \wedge ((v8\_clvect\_1 \\
& X1) \wedge (l2\_clvect\_1 X1)))))))))) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\
& X1)))))) \Rightarrow (\forall X3.(v1\_xcmplx\_0 X3) \Rightarrow (\forall X4.((v1\_funct\_1 \\
& X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\
& X1)))))) \Rightarrow ((X4 = k2\_vfunct\_2 X0 X1 X2 X3) \Leftrightarrow ((k1\_relset\_1 X0 X4 = k1\_relset\_1 \\
& X0 X2) \wedge (\forall X5.(m1\_subset\_1 X5 X0) \Rightarrow ((X5 \in k1\_relset\_1 X0 X4) \Rightarrow \\
& (k7\_partfun1 (u1\_struct\_0 X1) X4 X5 = k1\_clvect\_1 X1 (k7\_partfun1 \\
& (u1\_struct\_0 X1) X2 X5) X3)))))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \tag{16}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \tag{17}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\
& ((v4\_normsp\_0 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\
& X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge (l2\_clvect\_1 X0)))))))))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge \\
& ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 \\
& X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(v1\_xcmplx\_0 X4) \Rightarrow ((r3\_ncfcont1 \\
& X1 X0 X2 X3) \Rightarrow (r3\_ncfcont1 X1 X0 (k2\_vfunct\_2 (u1\_struct\_0 X1) X0 \\
& X2 X4) X3)))))))))
\end{aligned}$$