

## t38\_nfcont\_1

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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  $v5\_rlvect.1 : \iota \Rightarrow o$  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  $v3\_normsp.0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp.0 : \iota \Rightarrow o$  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  $r5\_nfcont.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $k1\_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal.0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_normsp.0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr.0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1\_subset.1 X1 (k1\_zfmisc.1 X2)) \wedge (v1\_xboole.0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset.1 X1 (k1\_zfmisc.1 X2))) \Rightarrow (m1\_subset.1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 (k1\_zfmisc.1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 X1) \Rightarrow ((v1\_xboole.0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\
& X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge \\
& ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 \\
& X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2. \forall X3. ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((r5\_nfcont\_1 \\
& X0 X1 X2 X3) \Leftrightarrow ((r1\_tarski X2 (k1\_relset\_1 (u1\_struct\_0 X0) X3)) \wedge \\
& (\exists X4. (m1\_subset\_1 X4 k1\_numbers) \wedge ((\neg r1\_xxreal\_0 X4 k6\_numbers) \wedge \\
& (\forall X5. (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. (m1\_subset\_1 \\
& X6 (u1\_struct\_0 X0)) \Rightarrow (((X5 \in X2) \wedge (X6 \in X2)) \Rightarrow (r1\_xxreal\_0 (k1\_normsp\_0 \\
& X1 (k5\_algstr\_0 X1 (k7\_partfun1 (u1\_struct\_0 X1) X3 X5) (k7\_partfun1 \\
& (u1\_struct\_0 X1) X3 X6))) (k8\_real\_1 X4 (k1\_normsp\_0 X0 (k5\_algstr\_0 \\
& X0 X5 X6))))))))))))) \Rightarrow
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 \\
& X2) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 \\
& X2) \wedge ((v3\_normsp\_0 X2) \wedge ((v4\_normsp\_0 X2) \wedge ((v2\_normsp\_1 X2) \wedge \\
& (l1\_normsp\_1 X2)))))))))) \Rightarrow (\forall X3. ((\neg v2\_struct\_0 X3) \wedge \\
& ((v13\_algstr\_0 X3) \wedge ((v2\_rlvect\_1 X3) \wedge ((v3\_rlvect\_1 X3) \wedge ((v4\_rlvect\_1 \\
& X3) \wedge ((v5\_rlvect\_1 X3) \wedge ((v6\_rlvect\_1 X3) \wedge ((v7\_rlvect\_1 X3) \wedge \\
& ((v8\_rlvect\_1 X3) \wedge ((v3\_normsp\_0 X3) \wedge ((v4\_normsp\_0 X3) \wedge ((v2\_normsp\_1 \\
& X3) \wedge (l1\_normsp\_1 X3)))))))))) \Rightarrow (\forall X4. ((v1\_funct\_1 \\
& X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X2) \\
& (u1\_struct\_0 X3)))))) \Rightarrow (((r5\_nfcont\_1 X2 X3 X0 X4) \wedge (r1\_tarski X1 \\
& X0)) \Rightarrow (r5\_nfcont\_1 X2 X3 X1 X4)))
\end{aligned}$$