

## t13\_nfcont\_4

(TMN1tyEbVztFC1i8ipUJQ54oUMW1sNuqgdN)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  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  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $m1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_nfcont\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $r1\_nfcont\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. 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  $v1\_xbool\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $u1\_normsp\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_real\_ns1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
 & (v1\_xreal\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 \\
 & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X0)))))) \Rightarrow (\forall X3. \\
 & ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\
 & (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \Rightarrow ((X3 = X2) \Rightarrow ((r1\_nfcont\_4 \\
 & X0 X2 X1) \Leftrightarrow (r1\_nfcont\_3 (k4\_real\_ns1 X0) X3 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ (v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\ X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge \\ ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 \\ X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow (\forall X2.((v1\_funct\_1 \\ X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\ X1)))))) \Rightarrow ((\exists X3.(m1\_rcomp\_1 X3 X0) \wedge (k9\_subset\_1 k1\_numbers \\ (k1\_relset\_1 k1\_numbers X2) X3 = k1\_tarski X0)) \Rightarrow (r1\_nfcont\_3 X1 \\ X2 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k4\_real\_ns1 X0)) \wedge \\ ((v13\_algstr\_0 (k4\_real\_ns1 X0)) \wedge ((v2\_rlvect\_1 (k4\_real\_ns1 \\ X0)) \wedge ((v3\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v4\_rlvect\_1 (k4\_real\_ns1 \\ X0)) \wedge ((v5\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v6\_rlvect\_1 (k4\_real\_ns1 \\ X0)) \wedge ((v7\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v8\_rlvect\_1 (k4\_real\_ns1 \\ X0)) \wedge ((v3\_normsp\_0 (k4\_real\_ns1 X0)) \wedge ((v4\_normsp\_0 (k4\_real\_ns1 \\ X0)) \wedge ((v1\_normsp\_1 (k4\_real\_ns1 X0)) \wedge (v2\_normsp\_1 (k4\_real\_ns1 \\ X0)))))))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (7)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k4\_real\_ns1 X0)) \wedge \\ ((v1\_normsp\_1 (k4\_real\_ns1 X0)) \wedge (l1\_normsp\_1 (k4\_real\_ns1 X0)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\
& ((v1\_normsp\_1\ X1) \wedge (l1\_normsp\_1\ X1))) \Rightarrow ((X1 = k4\_real\_ns1\ X0) \Leftrightarrow \\
& ((u1\_struct\_0\ X1 = k1\_euclid\ X0) \wedge ((k4\_struct\_0\ X1 = k5\_euclid\ X0) \wedge \\
& ((r1\_funct\_2\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X1)) \\
& (u1\_struct\_0\ X1)\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X0))\ ( \\
& k1\_euclid\ X0)\ (u1\_algstr\_0\ X1)\ (k1\_real\_ns1\ X0)) \wedge ((r1\_funct\_2 \\
& (k2\_zfmisc\_1\ k1\_numbers\ (u1\_struct\_0\ X1))\ (u1\_struct\_0\ X1)\ (k2\_zfmisc\_1 \\
& k1\_numbers\ (k1\_euclid\ X0))\ (k1\_euclid\ X0)\ (u1\_rlvect\_1\ X1)\ (k2\_real\_ns1 \\
& X0)) \wedge (r1\_funct\_2\ (u1\_struct\_0\ X1)\ k1\_numbers\ (k1\_euclid\ X0)\ k1\_numbers \\
& (u1\_normsp\_0\ X1)\ (k3\_real\_ns1\ X0)))))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1) \Rightarrow (v7\_ordinal1\ X0) \tag{11}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers) \Rightarrow (\forall X1. \\
& (v1\_xreal\_0\ X1) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge (m1\_subset\_1\ X2 \\
& (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ (k1\_euclid\ X0)))))) \Rightarrow ((\exists X3. \\
& (m1\_rcomp\_1\ X3\ X1) \wedge (k9\_subset\_1\ k1\_numbers\ (k1\_relset\_1\ k1\_numbers \\
& X2)\ X3 = k1\_tarski\ X1)) \Rightarrow (r1\_nfcont\_4\ X0\ X2\ X1)))
\end{aligned}$$