

## t29\_nfcont\_4

(TMbH5Xim3YQjsJWbupe9ZQMDRuorA6JYYx3)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_nfcont\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_fcont\_1 : \iota \Rightarrow o$  be given. Let  $k1\_nfcont\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nfcont\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_nfcont\_3 : \iota \Rightarrow \iota \Rightarrow o$  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  $k4\_ordinal1 : \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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.

$$\begin{aligned}
 & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
 & (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
 & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \Rightarrow \\
 & (\forall X3. ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & X1 (k1\_euclid X0)))))) \Rightarrow ((X2 = X3) \Rightarrow (r2\_relset\_1 X1 k1\_numbers (k3\_normsp\_0 \\
 & X1 (k4\_real\_ns1 X0) X2) (k1\_nfcont\_4 X0 X1 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \Rightarrow \\
& (\forall X3. ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X1 (k1\_euclid X0)))))) \Rightarrow ((X2 = X3) \Rightarrow (k5\_vfunct\_1 X1 (k4\_real\_ns1 \\
& X0) X2 = k2\_nfcont\_4 X0 X1 X3))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\
& (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid \\
& X0)))))) \Rightarrow ((X1 = X2) \Rightarrow ((v1\_nfcont\_3 X1 (k4\_real\_ns1 X0) \Leftrightarrow (v1\_nfcont\_4 \\
& X2 X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\
& ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 \\
& X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge \\
& ((v3\_normsp\_0 X1) \wedge ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 \\
& X1)))))))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X1)))))) \Rightarrow \\
& (((r1\_tarski X0 (k1\_relset\_1 k1\_numbers X2)) \wedge (v1\_nfcont\_3 (k2\_partfun1 \\
& k1\_numbers (u1\_struct\_0 X1) X2 X0) X1)) \Rightarrow ((v1\_fcont\_1 (k2\_partfun1 \\
& k1\_numbers k1\_numbers (k3\_normsp\_0 k1\_numbers X1 X2) X0)) \wedge (v1\_nfcont\_3 \\
& (k2\_partfun1 k1\_numbers (u1\_struct\_0 X1) (k5\_vfunct\_1 k1\_numbers \\
& X1 X2) X0) X1))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{6}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow(k2\_partfun1 \\ & X0 X1 X2 X3 = k5\_relat\_1 X2 X3) \end{aligned} \quad (8)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg v2\_struct\_0 (k4\_real\_ns1 X0))\wedge \\ & ((v13\_algstr\_0 (k4\_real\_ns1 X0))\wedge((v2\_rlvect\_1 (k4\_real\_ns1 \\ & X0))\wedge((v3\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v4\_rlvect\_1 (k4\_real\_ns1 \\ & X0))\wedge((v5\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v6\_rlvect\_1 (k4\_real\_ns1 \\ & X0))\wedge((v7\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v8\_rlvect\_1 (k4\_real\_ns1 \\ & X0))\wedge((v3\_normsp\_0 (k4\_real\_ns1 X0))\wedge((v4\_normsp\_0 (k4\_real\_ns1 \\ & X0))\wedge((v1\_normsp\_1 (k4\_real\_ns1 X0))\wedge(v2\_normsp\_1 (k4\_real\_ns1 \\ & X0)))))))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (11)$$

Assume the following.

$$\forall X0.(l2\_normsp\_0 X0)\Rightarrow((l1\_normsp\_0 X0)\wedge(l2\_struct\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l2\_normsp\_0 X0)) \quad (13)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg v2\_struct\_0 (k4\_real\_ns1 X0))\wedge \\ & ((v1\_normsp\_1 (k4\_real\_ns1 X0))\wedge(l1\_normsp\_1 (k4\_real\_ns1 X0)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((\neg v2\_struct\_0 \\ & X1)\wedge(l1\_normsp\_0 X1))\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))))\Rightarrow((v1\_funct\_1 (k3\_normsp\_0 \\ & X0 X1 X2))\wedge(m1\_subset\_1 (k3\_normsp\_0 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k1\_numbers)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((v1\_funct\_1 \\ & (k2\_partfun1 X0 X1 X2 X3))\wedge(m1\_subset\_1 (k2\_partfun1 X0 X1 X2 X3) \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge \\ & ((\neg v1\_xboole\_0 X1)\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 (k1\_euclid X0))))))\Rightarrow((v1\_funct\_1 (k2\_nfcont\_4 \\ & X0 X1 X2))\wedge(m1\_subset\_1 (k2\_nfcont\_4 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X1 (k1\_euclid X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge \\ & ((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 \\ & (k1\_euclid X0))))))\Rightarrow((v1\_funct\_1 (k1\_nfcont\_4 X0 X1 X2))\wedge(m1\_subset\_1 \\ & (k1\_nfcont\_4 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 k1\_numbers)))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge \\ & ((v1\_normsp\_1 X1)\wedge(l1\_normsp\_1 X1)))\Rightarrow((X1 = k4\_real\_ns1 X0)\Leftrightarrow \\ & ((u1\_struct\_0 X1 = k1\_euclid X0)\wedge((k4\_struct\_0 X1 = k5\_euclid X0)\wedge \\ & ((r1\_funct\_2 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X1)) \\ & (u1\_struct\_0 X1) (k2\_zfmisc\_1 (k1\_euclid X0) (k1\_euclid X0)) ( \\ & k1\_euclid X0) (u1\_algstr\_0 X1) (k1\_real\_ns1 X0))\wedge((r1\_funct\_2 \\ & (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X1)) (u1\_struct\_0 X1) (k2\_zfmisc\_1 \\ & k1\_numbers (k1\_euclid X0)) (k1\_euclid X0) (u1\_rlvect\_1 X1) (k2\_real\_ns1 \\ & X0))\wedge(r1\_funct\_2 (u1\_struct\_0 X1) k1\_numbers (k1\_euclid X0) k1\_numbers \\ & (u1\_normsp\_0 X1) (k3\_real\_ns1 X0)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (21)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers)\Rightarrow(\forall X1. \\ & \forall X2.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers (k1\_euclid X0))))\Rightarrow(((r1\_tarski X1 (k1\_relset\_1 k1\_numbers \\ & X2))\wedge(v1\_nfcont\_4 (k2\_partfun1 k1\_numbers (k1\_euclid X0) X2 X1) \\ & X0))\Rightarrow((v1\_fcont\_1 (k2\_partfun1 k1\_numbers k1\_numbers (k1\_nfcont\_4 \\ & X0 k1\_numbers X2) X1))\wedge(v1\_nfcont\_4 (k2\_partfun1 k1\_numbers ( \\ & k1\_euclid X0) (k2\_nfcont\_4 X0 k1\_numbers X2) X1) X0)))) \end{aligned}$$