t13_nfcont_3 (TMVkYDH1k547szpvpusiF75BAHJ2YpNyxX6)

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Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ 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 $v1\_funct\_1 : \iota \Rightarrow o$ 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 $r1\_nfcont\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $k18\_complex1 : \iota \Rightarrow \iota$ be given. Let $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $l1\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l2\_normsp\_0 : \iota \Rightarrow o$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_comseq\_2 : \iota \Rightarrow o$ be given. Let $k2\_seq\_2 : \iota \Rightarrow \iota$ be given.

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v5\_rlvect\_1\ X1)\wedge((v6\_rlvect\_1\ X1)\wedge((v7\_rlvect\_1\ X1)\wedge((v8\_rlvect\_1\ X1)\wedge((v3\_normsp\_0\ X1)\wedge((v4\_normsp\_0\ X1)\wedge((v2\_normsp\_1\ X1)\wedge(l1\_normsp\_1\ X1))))))))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ (u1\_struct\_0\ X1)))))\Rightarrow((r1\_nfcont\_3\ X1\ X2\ X0)\Leftrightarrow((X0\in k1\_relset\_1\ k1\_numbers\ X2)\wedge(\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X3\ k6\_numbers)\wedge(\forall X4.(v1\_xreal\_0\ X4)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X4\ k6\_numbers)\wedge(\forall X5.(v1\_xreal\_0\ X5)\Rightarrow(\neg(X5\in k1\_relset\_1\ k1\_numbers\ X2)\wedge((\neg r1\_xxreal\_0\ X4\ (k18\_complex1\ (k6\_xcmplx\_0\ X5\ X0)))\wedge(r1\_xxreal\_0\ X3\ (k1\_normsp\_0\ X1\ (k5\_algstr\_0\ X1\ (k7\_partfun1\ (u1\_struct\_0\ X1)\ X2\ X5)\ (k7\_partfun1\ (u1\_struct\_0\ X1)\ X2\ X0))))))))))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\neg(X0\in X1)\wedge(v1\_xboole\_0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge((v3\_normsp\_0\ X0)\wedge((v4\_normsp\_0\ X0)\wedge((v2\_normsp\_1\ X0)\wedge(l1\_normsp\_1\ X0))))))))))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ (u1\_struct\_0\ X0)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ X2)\ (k1\_relset\_1\ k1\_numbers\ X1))\Rightarrow(r2\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ X0)\ (k8\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ X0)\ k1\_numbers\ X2\ (k4\_vfunct\_1\ k1\_numbers\ X0\ X1\ X3))\ (k5\_normsp\_1\ X0\ (k8\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ X0)\ k1\_numbers\ X2\ X1)\ X3)))))) \tag{3}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v5\_rlvect\_1\ X1)\wedge((v6\_rlvect\_1\ X1)\wedge((v7\_rlvect\_1\ X1)\wedge((v8\_rlvect\_1\ X1)\wedge((v3\_normsp\_0\ X1)\wedge((v4\_normsp\_0\ X1)\wedge((v2\_normsp\_1\ X1)\wedge(l1\_normsp\_1\ X1))))))))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ X1))))))\Rightarrow((v3\_normsp\_1\ X2\ X1)\Rightarrow(k6\_normsp\_1\ X1\ (k5\_normsp\_1\ X1\ X2\ X0)=k1\_rlvect\_1\ X1\ (k6\_normsp\_1\ X1\ X2)\ X0)))) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v5\_rlvect\_1\ X1)\wedge((v6\_rlvect\_1\ X1)\wedge((v7\_rlvect\_1\ X1)\wedge((v8\_rlvect\_1\ X1)\wedge((v3\_normsp\_0\ X1)\wedge((v4\_normsp\_0\ X1)\wedge((v2\_normsp\_1\ X1)\wedge(l1\_normsp\_1\ X1))))))))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ X1))))))\Rightarrow((v3\_normsp\_1\ X2\ X1)\Rightarrow(v3\_normsp\_1\ (k5\_normsp\_1\ X1\ X2\ X0)\ X1)))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1)\Rightarrow(m1\_subset\_1\ X0\ X1) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((r2\_funct\_2\ X0\ X1\ X2\ X3)\Leftrightarrow(X2 = X3)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{8}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{10}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \tag{12}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X2)\wedge(((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))\wedge((v1\_relat\_1\ X4)\wedge((v5\_relat\_1\ X4\ X1)\wedge(v1\_funct\_1\ X4)))))\Rightarrow((v1\_funct\_1\ (k8\_funct\_2\ X0\ X1\ X2\ X3\ X4))\wedge((v1\_funct\_2\ (k8\_funct\_2\ X0\ X1\ X2\ X3\ X4)\ X0\ X1)\wedge(m1\_subset\_1\ (k8\_funct\_2\ X0\ X1\ X2\ X3\ X4)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_rlvect\_1\ X0))\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ X0))))))\wedge(m1\_subset\_1\ X2\ k1\_numbers)))\Rightarrow((v1\_funct\_1\ (k5\_normsp\_1\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k5\_normsp\_1\ X0\ X1\ X2)\ k5\_numbers\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (k5\_normsp\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ X0)))))) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0)\wedge(((\neg v2\_struct\_0\ X1)\wedge(l1\_rlvect\_1\ X1))\wedge(((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (u1\_struct\_0\ X1)))))\wedge(m1\_subset\_1\ X3\ k1\_numbers))))\Rightarrow((v1\_funct\_1\ (k4\_vfunct\_1\ X0\ X1\ X2\ X3))\wedge(m1\_subset\_1\ (k4\_vfunct\_1\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (u1\_struct\_0\ X1))))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(m1\_subset\_1\ (k1\_relset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{17}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(l1\_rlvect\_1\ X1))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (u1\_struct\_0\ X1)))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (u1\_struct\_0\ X1)))))\Rightarrow((X4 = k4\_vfunct\_1\ X0\ X1\ X2\ X3)\Leftrightarrow((k1\_relset\_1\ X0\ X4 = k1\_relset\_1\ X0\ X2)\wedge(\forall X5.(m1\_subset\_1\ X5\ X0)\Rightarrow((X5 \in k1\_relset\_1\ X0\ X4)\Rightarrow(k7\_partfun1\ (u1\_struct\_0\ X1)\ X4\ X5 = k1\_rlvect\_1\ X1\ (k7\_partfun1\ (u1\_struct\_0\ X1)\ X2\ X5)\ X3)))))))) \tag{18}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge((v3\_normsp\_0\ X0)\wedge((v4\_normsp\_0\ X0)\wedge((v2\_normsp\_1\ X0)\wedge(l1\_normsp\_1\ X0))))))))))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ (u1\_struct\_0\ X0)))))\Rightarrow(\forall X2.(v1\_xreal\_0\ X2)\Rightarrow((r1\_nfcont\_3\ X0\ X1\ X2)\Leftrightarrow((X2 \in k1\_relset\_1\ k1\_numbers\ X1)\wedge(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow(((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ X3)\ (k1\_relset\_1\ k1\_numbers\ X1))\wedge((v2\_comseq\_2\ X3)\wedge(k2\_seq\_2\ X3 = X2)))\Rightarrow((v3\_normsp\_1\ (k8\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ X0)\ k1\_numbers\ X3\ X1)\ X0)\wedge(k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X2 = k6\_normsp\_1\ X0\ (k8\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ X0)\ k1\_numbers\ X3\ X1)))))))))) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{21}$$

Theorem 1

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v13\_algstr\_0\ X2)\wedge((v2\_rlvect\_1\ X2)\wedge((v3\_rlvect\_1\ X2)\wedge((v4\_rlvect\_1\ X2)\wedge((v5\_rlvect\_1\ X2)\wedge((v6\_rlvect\_1\ X2)\wedge((v7\_rlvect\_1\ X2)\wedge((v8\_rlvect\_1\ X2)\wedge((v3\_normsp\_0\ X2)\wedge((v4\_normsp\_0\ X2)\wedge((v2\_normsp\_1\ X2)\wedge(l1\_normsp\_1\ X2))))))))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ (u1\_struct\_0\ X2)))))\Rightarrow((r1\_nfcont\_3\ X2\ X3\ X1)\Rightarrow(r1\_nfcont\_3\ X2\ (k4\_vfunct\_1\ k1\_numbers\ X2\ X3\ X0)\ X1)))))$$