t135_seq_4 (TMazV9aGghzQYao97tBUYkky5Q5keaStgiw)

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Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k7\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_numbers : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_card\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (((r1\_xxreal\_0\ X0\ X1) \vee (r1\_xxreal\_0\ X0\ (k7\_nat\_d\ X1\ np\_\_1))) \Rightarrow ((\neg r1\_xxreal\_0\ (k1\_nat\_1\ X1\ np\_\_1)\ X0) \wedge ((r1\_xxreal\_0\ X0\ (k1\_nat\_1\ X1\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ (k2\_nat\_1\ (k1\_nat\_1\ X1\ np\_\_1)\ np\_\_1)\ X0) \wedge ((r1\_xxreal\_0\ X0\ (k2\_nat\_1\ (k1\_nat\_1\ X1\ np\_\_1)\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ (k1\_nat\_1\ X1\ np\_\_2)\ X0) \wedge (r1\_xxreal\_0\ X0\ (k1\_nat\_1\ X1\ np\_\_2)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (((r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_2)\ X1) \vee (r1\_xxreal\_0\ (k2\_nat\_1\ (k1\_nat\_1\ X0\ np\_\_1)\ np\_\_1)\ X1)) \Rightarrow ((\neg r1\_xxreal\_0\ X1\ (k1\_nat\_1\ X0\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ X1\ (k7\_nat\_d\ (k1\_nat\_1\ X0\ np\_\_1)\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ X1\ (k7\_nat\_d\ (k1\_nat\_1\ X0\ np\_\_1)\ np\_\_2)) \wedge ((r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_1)\ X1) \wedge ((\neg r1\_xxreal\_0\ X1\ (k2\_nat\_1\ (k7\_nat\_d\ X0\ np\_\_1)\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ X1\ (k7\_nat\_d\ (k2\_nat\_1\ (k7\_nat\_d\ X0\ np\_\_1)\ np\_\_1)\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ X1\ X0) \wedge ((\neg r1\_xxreal\_0\ X1\ (k7\_nat\_d\ X0\ np\_\_1)) \wedge ((\neg r1\_xxreal\_0\ X1\ (k7\_nat\_d\ X0\ np\_\_2)) \wedge (r1\_xxreal\_0\ X0\ X1)))))))))))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.(v7\_ordinal1\ X1)\Rightarrow((X1\in k1\_relset\_1\ k5\_numbers\ X0)\Leftrightarrow ((r1\_xxreal\_0\ np\_\_1\ X1)\wedge(r1\_xxreal\_0\ X1\ (k3\_finseq\_1\ X0))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(X0\in X1)\Rightarrow(m1\_subset\_1\ X0\ X1) \tag{4}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow((X0\in k2\_finseq\_1\ X1)\Leftrightarrow((r1\_xxreal\_0\ np\_\_1\ X0)\wedge(r1\_xxreal\_0\ X0\ X1)))) \tag{5}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((((r1\_xxreal\_0\ np\_\_1\ X0)\wedge (r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_1)\ (k3\_finseq\_1\ X1)))\Rightarrow((X0\in k4\_finseq\_1 X1)\wedge(k1\_nat\_1\ X0\ np\_\_1\in k4\_finseq\_1\ X1)))\wedge(((X0\in k4\_finseq\_1 X1)\wedge(k1\_nat\_1\ X0\ np\_\_1\in k4\_finseq\_1\ X1))\Rightarrow((r1\_xxreal\_0\ np\_\_1 X0)\wedge(r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_1)\ (k3\_finseq\_1\ X1)))))) \tag{6}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_2)\wedge(m2\_subset\_1\ np\_\_2\ k1\_numbers\ k5\_numbers))\wedge ((m1\_subset\_1\ np\_\_2\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_2\ k1\_numbers)) \tag{7}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1)\wedge(m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers))\wedge ((m1\_subset\_1\ np\_\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{9}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (k4\_finseq\_1\ X0 = k9\_xtuple\_0\ X0) \tag{11}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (k3\_finseq\_1\ X0 = k1\_card\_1\ X0) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow (k1\_nat\_1\ X0\ X1 = k2\_xcmplx\_0\ X0\ X1) \tag{14}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \tag{15}$$

Assume the following.

$$\forall X0.(v1\_finset\_1\ X0)\Rightarrow((v1\_finset\_1\ (k1\_card\_1\ X0))\wedge(v1\_card\_1\ (k1\_card\_1\ X0))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow(v7\_ordinal1\ (k2\_xcmplx\_0\ X0\ X1)) \tag{17}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{18}$$

Assume the following.

$$\forall X0.v1\_card\_1\ (k1\_card\_1\ X0) \tag{19}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.(m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers)\Rightarrow((X1 = k3\_finseq\_1\ X0)\Leftrightarrow(k2\_finseq\_1\ X1 = k9\_xtuple\_0\ X0))) \tag{20}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Leftrightarrow(X0 \in k4\_ordinal1) \tag{21}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{22}$$

Assume the following.

$$\forall X0.((v3\_ordinal1\ X0)\wedge(v1\_finset\_1\ X0))\Rightarrow(v7\_ordinal1\ X0) \tag{23}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow ((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge (v1\_finseq\_1\ X0)))) \tag{24}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow ((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finset\_1\ X0))) \tag{25}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \tag{26}$$

Assume the following.

$$\forall X0.(v1\_card\_1\ X0)\Rightarrow(v3\_ordinal1\ X0) \tag{27}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((((r1\_xxreal\_0\ np\_\_1\ X0)\wedge (r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_2)\ (k3\_finseq\_1\ X1)))\Rightarrow((X0\in k4\_finseq\_1\ X1)\wedge((k1\_nat\_1\ X0\ np\_\_1\in k4\_finseq\_1\ X1)\wedge(k1\_nat\_1\ X0\ np\_\_2\in k4\_finseq\_1\ X1))))\wedge(((X0\in k4\_finseq\_1\ X1)\wedge((k1\_nat\_1\ X0\ np\_\_1\in k4\_finseq\_1\ X1)\wedge(k1\_nat\_1\ X0\ np\_\_2\in k4\_finseq\_1\ X1)))\Rightarrow((r1\_xxreal\_0\ np\_\_1\ X0)\wedge(r1\_xxreal\_0\ (k1\_nat\_1\ X0\ np\_\_2)\ (k3\_finseq\_1\ X1))))))$$