l83_o_ring_1 (TMXBqCCKzj5ttzN7tCUSAzny3DkgopLmhwZ)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v12\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $k9\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_numbers : \iota$ be given. Let $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $np\_\_0 : \iota$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k4\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v9\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2)) \wedge (v1\_xboole\_0\ X2)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((X1 = k9\_finseq\_1\ X0) \Leftrightarrow ((k3\_finseq\_1\ X1 = np\_\_1) \wedge (k1\_funct\_1\ X1\ np\_\_1 = X0))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{3}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\neg(r1\_xxreal\_0\ X0\ np\_\_1)\wedge((X0\neq k6\_numbers)\wedge (X0\neq np\_\_1))) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.(v7\_ordinal1\ X1)\Rightarrow((X1\in k1\_relset\_1\ k5\_numbers\ X0)\Leftrightarrow ((r1\_xxreal\_0\ np\_\_1\ X1)\wedge(r1\_xxreal\_0\ X1\ (k3\_finseq\_1\ X0))))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow (\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow(k3\_finseq\_1\ (k7\_finseq\_1\ X0\ X1) = k2\_nat\_1\ (k3\_finseq\_1\ X0)\ (k3\_finseq\_1\ X1))) \tag{6}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow((\neg r1\_xxreal\_0\ (k1\_nat\_1\ X1\ np\_\_1)\ X0)\Leftrightarrow(r1\_xxreal\_0\ X0\ X1))) \tag{7}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(r1\_xxreal\_0\ X0\ (k2\_xcmplx\_0\ X0\ X1))) \tag{8}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1)\wedge(m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers))\wedge ((m1\_subset\_1\ np\_\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{9}$$

Assume the following.

$$(m2\_subset\_1\ np\_\_0\ k1\_numbers\ k5\_numbers)\wedge((m1\_subset\_1\ np\_\_0\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_0\ k1\_numbers)) \tag{10}$$

Assume the following.

$$k2\_xcmplx\_0\ np\_\_0\ np\_\_1 = np\_\_1 \tag{11}$$

Assume the following.

$$r1\_xxreal\_0\ np\_\_1\ np\_\_1 \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow(r1\_xxreal\_0\ X0\ X0) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Leftrightarrow(m1\_finseq\_1\ X1\ X0) \tag{15}$$

Assume the following.

$$\forall X0.k9\_finseq\_1\ X0 = k5\_finseq\_1\ X0 \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1\ X1\ X0)\wedge(m1\_finseq\_1\ X2\ X0))\Rightarrow(k8\_finseq\_1\ X0\ X1\ X2 = k7\_finseq\_1\ X1\ X2) \tag{17}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{18}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{19}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(k4\_finseq\_1\ X0 = k9\_xtuple\_0\ X0) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k2\_nat\_1\ X0\ X1 = k2\_xcmplx\_0\ X0\ X1) \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow(k1\_nat\_1\ X0\ X1 = k2\_xcmplx\_0\ X0\ X1) \tag{23}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(l6\_algstr\_0\ X2))\Rightarrow(\forall X3.(m2\_finseq\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(((v12\_o\_ring\_1\ X3\ X2)\wedge((r1\_xxreal\_0\ X0\ (k3\_finseq\_1\ X3))\wedge(r1\_xxreal\_0\ X1\ (k3\_finseq\_1\ X3))))\Rightarrow((X0 = k6\_numbers)\vee((X1 = k6\_numbers)\vee(v12\_o\_ring\_1\ (k8\_finseq\_1\ (u1\_struct\_0\ X2)\ X3\ (k12\_finseq\_1\ (u1\_struct\_0\ X2)\ (k1\_algstr\_0\ X2\ (k7\_partfun1\ (u1\_struct\_0\ X2)\ X3\ X0)\ (k7\_partfun1\ (u1\_struct\_0\ X2)\ X3\ X1))))\ X2)))))))) \tag{24}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge (l6\_algstr\_0\ X1))\Rightarrow(\forall X2.(m2\_finseq\_1\ X2\ (u1\_struct\_0\ X1))\Rightarrow (\forall X3.(m2\_finseq\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow((r1\_xxreal\_0\ X0\ (k3\_finseq\_1\ X2))\Rightarrow((X0 = k6\_numbers)\vee(k7\_partfun1\ (u1\_struct\_0\ X1)\ (k8\_finseq\_1\ (u1\_struct\_0\ X1)\ X3\ X2)\ (k2\_nat\_1\ (k3\_finseq\_1\ X3)\ X0) = k7\_partfun1\ (u1\_struct\_0\ X1)\ X2\ X0))))))) \tag{25}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l6\_algstr\_0\ X0))\Rightarrow(\forall X1.(m2\_finseq\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m2\_finseq\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(((v12\_o\_ring\_1\ X1\ X0)\wedge(v12\_o\_ring\_1\ X2\ X0))\Rightarrow (v12\_o\_ring\_1\ (k8\_finseq\_1\ (u1\_struct\_0\ X0)\ X1\ X2)\ X0)))) \tag{26}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l6\_algstr\_0\ X0))\Rightarrow(\forall X1.(m2\_finseq\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m2\_finseq\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m2\_finseq\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow((X1 = k8\_finseq\_1\ (u1\_struct\_0\ X0)\ X2\ X3)\Leftrightarrow((k4\_finseq\_1\ X1 = k2\_finseq\_1\ (k2\_nat\_1\ (k3\_finseq\_1\ X2)\ (k3\_finseq\_1\ X3)))\wedge((\forall X4.(v7\_ordinal1\ X4)\Rightarrow((X4 \in k4\_finseq\_1\ X2)\Rightarrow(k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X4 = k7\_partfun1\ (u1\_struct\_0\ X0)\ X2\ X4)))\wedge(\forall X4.(v7\_ordinal1\ X4)\Rightarrow((X4 \in k4\_finseq\_1\ X3)\Rightarrow(k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ (k2\_nat\_1\ (k3\_finseq\_1\ X2)\ X4) = k7\_partfun1\ (u1\_struct\_0\ X0)\ X3\ X4)))))))) \tag{27}$$

Assume the following.

$$\forall X0.v1\_finseq\_1\ (k5\_finseq\_1\ X0) \tag{28}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \tag{29}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k5\_finseq\_1\ X0))\wedge(v1\_funct\_1\ (k5\_finseq\_1\ X0)) \tag{30}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Rightarrow((v1\_funct\_1\ X1)\wedge((v1\_finseq\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))) \tag{31}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1\ X1\ X0)\Rightarrow((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1))) \tag{32}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1\ X1\ X0)\wedge(m1\_finseq\_1\ X2\ X0))\Rightarrow(m2\_finseq\_1\ (k8\_finseq\_1\ X0\ X1\ X2)\ X0) \tag{33}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{34}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(m2\_subset\_1\ (k3\_finseq\_1\ X0)\ k1\_numbers\ k5\_numbers) \tag{35}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(m2\_subset\_1\ (k2\_nat\_1\ X0\ X1)\ k1\_numbers\ k5\_numbers) \tag{36}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l6\_algstr\_0\ X0))\Rightarrow(\forall X1.(m2\_finseq\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow((v12\_o\_ring\_1\ X1\ X0)\Leftrightarrow((k3\_finseq\_1\ X1\neq k6\_numbers)\wedge(\forall X2.(v7\_ordinal1\ X2)\Rightarrow(\neg(X2\neq k6\_numbers)\wedge((r1\_xxreal\_0\ X2\ (k3\_finseq\_1\ X1))\wedge((\neg v9\_o\_ring\_1\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X2)\ X0)\wedge(\forall X3.(v7\_ordinal1\ X3)\Rightarrow(\forall X4.(v7\_ordinal1\ X4)\Rightarrow(\neg((k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X2 = k6\_algstr\_0\ X0\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X3)\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X4))\vee(k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X2 = k1\_algstr\_0\ X0\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X3)\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ X4)))\wedge((X3\neq k6\_numbers)\wedge((\neg r1\_xxreal\_0\ X2\ X3)\wedge((X4\neq k6\_numbers)\wedge(\neg r1\_xxreal\_0\ X2\ X4))))))))))))) \tag{37}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k2\_nat\_1\ X0\ X1 = k2\_nat\_1\ X1\ X0) \tag{38}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{39}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))) \tag{40}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (v1\_xxreal\_0\ X0) \tag{41}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (v1\_xreal\_0\ X0) \tag{42}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l6\_algstr\_0\ X0)) \Rightarrow (\forall X1.\ (m2\_finseq\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m2\_finseq\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (((v12\_o\_ring\_1\ X1\ X0) \wedge (v12\_o\_ring\_1\ X2\ X0)) \Rightarrow (v12\_o\_ring\_1\ (k8\_finseq\_1\ (u1\_struct\_0\ X0)\ (k8\_finseq\_1\ (u1\_struct\_0\ X0)\ X1\ X2)\ (k12\_finseq\_1\ (u1\_struct\_0\ X0)\ (k1\_algstr\_0\ X0\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X1\ (k3\_finseq\_1\ X1))\ (k7\_partfun1\ (u1\_struct\_0\ X0)\ X2\ (k3\_finseq\_1\ X2)))))\ X0))))$$