t6_prvect_1 (TMPo3jtyYQgX2mHYNjL6y8Ws9uAqZ2JXUXb)

October 27, 2020

Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_prvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k1\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_prvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2.((v3\_card\_1\ X2\ X1) \wedge (m2\_finseq\_1\ X2\ X0)) \Rightarrow (\forall X3.((v3\_card\_1\ X3\ X1) \wedge (m2\_finseq\_1\ X3\ X0)) \Rightarrow (\forall X4.((v1\_funct\_1\ X4) \wedge ((v1\_funct\_2\ X4\ (k2\_zfmisc\_1\ X0\ X0)\ X0) \wedge (m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))) \Rightarrow ((v1\_binop\_1\ X4\ X0) \Rightarrow (r2\_relset\_1\ k5\_numbers\ X0\ (k1\_finseqop\ X0\ X0\ X0\ X4\ X2\ X3)\ (k1\_finseqop\ X0\ X0\ X0\ X4\ X3\ X2)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))) \Rightarrow ((r2\_relset\_1\ X0\ X1\ X2\ X3) \Leftrightarrow (X2 = X3)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0) \Rightarrow (\forall X2.(m2\_finseq\_2\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{4}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge (m1\_subset\_1\ X3\ X0)))\Rightarrow(k5\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge (m1\_subset\_1\ X3\ X0)))\Rightarrow(k3\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0)\wedge((v7\_ordinal1\ X1)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X3\ (k4\_finseq\_2\ X1\ X0))\wedge(m1\_subset\_1\ X4\ (k4\_finseq\_2\ X1\ X0))))))\Rightarrow(k1\_prvect\_1\ X0\ X1\ X2\ X3\ X4 = k3\_funcop\_1\ X2\ X3\ X4) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge(((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ X0\ X1)\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ X2)))))\wedge((m1\_finseq\_1\ X4\ X0)\wedge(m1\_finseq\_1\ X5\ X1))))))\Rightarrow(k1\_finseqop\ X0\ X1\ X2\ X3\ X4\ X5 = k3\_funcop\_1\ X3\ X4\ X5) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2\ X1\ X0)\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ X0\ X1)\Rightarrow(m2\_finseq\_1\ X2\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Rightarrow((v1\_funct\_1\ X1)\wedge((v1\_finseq\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(v7\_ordinal1\ X0)\Rightarrow(m1\_finseq\_2\ (k4\_finseq\_2\ X0\ X1)\ X1) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge(v7\_ordinal1\ X2)))\Rightarrow((v1\_funct\_1\ (k2\_prvect\_1\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k2\_prvect\_1\ X0\ X1\ X2)\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ X2\ X0)\ (k4\_finseq\_2\ X2\ X0))\ (k4\_finseq\_2\ X2\ X0))\wedge(m1\_subset\_1\ (k2\_prvect\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ X2\ X0)\ (k4\_finseq\_2\ X2\ X0))\ (k4\_finseq\_2\ X2\ X0))))))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X2)\wedge(((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ X0\ X1)\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ X2)))))\wedge((m1\_finseq\_1\ X4\ X0)\wedge(m1\_finseq\_1\ X5\ X1))))))\Rightarrow(m2\_finseq\_1\ (k1\_finseqop\ X0\ X1\ X2\ X3\ X4\ X5)\ X2) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow((v1\_binop\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(k3\_binop\_1\ X0\ X1\ X2\ X3 = k3\_binop\_1\ X0\ X1\ X3\ X2)))) \tag{15}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow(\forall X2.(v7\_ordinal1\ X2)\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ X2\ X0)\ (k4\_finseq\_2\ X2\ X0))\ (k4\_finseq\_2\ X2\ X0))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ X2\ X0)\ (k4\_finseq\_2\ X2\ X0))\ (k4\_finseq\_2\ X2\ X0)))))\Rightarrow((X3 = k2\_prvect\_1\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(m2\_finseq\_2\ X4\ X0\ (k4\_finseq\_2\ X2\ X0))\Rightarrow(\forall X5.(m2\_finseq\_2\ X5\ X0\ (k4\_finseq\_2\ X2\ X0))\Rightarrow(k5\_binop\_1\ (k4\_finseq\_2\ X2\ X0)\ X3\ X4\ X5 = k1\_prvect\_1\ X0\ X2\ X1\ X4\ X5))))))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k4\_finseq\_2\ X1\ X0))\Rightarrow(v3\_card\_1\ X2\ X1)) \tag{17}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X1\ X1)\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1)\ X1)))))\Rightarrow((v1\_binop\_1\ X2\ X1)\Rightarrow(v1\_binop\_1\ (k2\_prvect\_1\ X1\ X2\ X0)\ (k4\_finseq\_2\ X0\ X1)))))$$