

t6\_prvect\_2  
(TMN4KyEAqkextxs5uDdF2KQifnNtice5N6S)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v2\_prvect\_2 : \iota \Rightarrow o$  be given. Let  $k14\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $g1\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k4\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k8\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k13\_prvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k2\_prvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k13\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $u1\_normsp\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_prvect\_2 : \iota \Rightarrow o$  be given. Let  $m1\_prvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_prvect\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $k10\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
 & ((\neg v1\_xboole\_0 X1) \wedge (\neg v1\_xboole\_0 X3) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X0 X1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 X2 X3) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3)))))) \Rightarrow ((r1\_funct\_2 X0 X1 X2 X3 X4 X5) \Leftrightarrow (X4 = X5))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X1 \\
& X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 k1\_numbers \\
& X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers X0) X0))))))\Rightarrow(\forall X4.\forall X5.\forall X6.\forall X7. \\
& (g1\_rlvect\_1 X0 X1 X2 X3 = g1\_rlvect\_1 X4 X5 X6 X7)\Rightarrow((X0 = X4)\wedge((X1 = \\
& X5)\wedge((X2 = X6)\wedge(X3 = X7))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((m1\_subset\_1 \\
& X1 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0))))\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 k1\_numbers \\
& X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers X0) X0))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 k1\_numbers)\wedge \\
& (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow \\
& (\forall X5.\forall X6.\forall X7.\forall X8.\forall X9.(g1\_normsp\_1 \\
& X0 X1 X2 X3 X4 = g1\_normsp\_1 X5 X6 X7 X8 X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = \\
& X7)\wedge((X3 = X8)\wedge(X4 = X9))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_normsp\_0 X0)\Rightarrow((v1\_funct\_1 (u1\_normsp\_0 X0))\wedge \\
& ((v1\_funct\_2 (u1\_normsp\_0 X0) (u1\_struct\_0 X0) k1\_numbers)\wedge( \\
& m1\_subset\_1 (u1\_normsp\_0 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) k1\_numbers))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(l2\_normsp\_0 X0)\Rightarrow((l1\_normsp\_0 X0)\wedge(l2\_struct\_0 X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l2\_normsp\_0 X0)) \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 \\
& X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0))))\Rightarrow(m1\_prvect\_2 (k9\_prvect\_2 \\
& X0) (k4\_prvect\_2 X0) k1\_numbers)
\end{aligned} \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0)))))\Rightarrow(m1\_subset\_1 (k8\_prvect\_2 X0) (k4\_card\_3 (k4\_prvect\_2 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0)))))\Rightarrow(m1\_prvect\_1 (k6\_prvect\_2 X0) (k4\_prvect\_2 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0)))))\Rightarrow((v1\_relat\_1 (k4\_prvect\_2 X0)\wedge((v2\_relat\_1 (k4\_prvect\_2 X0)\wedge((v1\_funct\_1 (k4\_prvect\_2 X0)\wedge((\neg v1\_xboole\_0 (k4\_prvect\_2 X0)\wedge(v1\_finseq\_1 (k4\_prvect\_2 X0)))))))))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1 X0)\wedge((v2\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge(v1\_finseq\_1 X0)))))\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_prvect\_2 X2 X0 X1)))\Rightarrow((v1\_funct\_1 (k2\_prvect\_2 X0 X1 X2))\wedge((v1\_funct\_2 (k2\_prvect\_2 X0 X1 X2) (k2\_zfmisc\_1 X1 (k4\_card\_3 X0)) (k4\_card\_3 X0))\wedge(m1\_subset\_1 (k2\_prvect\_2 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X1 (k4\_card\_3 X0)) (k4\_card\_3 X0)))))) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_finseq\_1 X0)\wedge(v2\_prvect\_2 X0)))))\Rightarrow((\neg v2\_struct\_0 (k14\_prvect\_2 X0)\wedge((v1\_normsp\_1 (k14\_prvect\_2 X0)\wedge(l1\_normsp\_1 (k14\_prvect\_2 X0)))))) \quad (13)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_finseq\_1 X0)\wedge(v2\_prvect\_2 X0)))))\Rightarrow((v1\_funct\_1 (k13\_prvect\_2 X0)\wedge((v1\_funct\_2 (k13\_prvect\_2 X0) (k4\_card\_3 (k4\_prvect\_2 X0) k1\_numbers)\wedge(m1\_subset\_1 (k13\_prvect\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k4\_card\_3 (k4\_prvect\_2 X0)) k1\_numbers)))))) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v2\_relat\_1 X0)\wedge(( \\ & v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 X0)\wedge(v1\_finseq\_1 X0))))))\wedge(m1\_prvect\_1 \\ & X1 X0))\Rightarrow((v1\_funct\_1 (k13\_prvect\_1 X0 X1))\wedge((v1\_funct\_2 (k13\_prvect\_1 \\ & X0 X1) (k2\_zfmisc\_1 (k4\_card\_3 X0) (k4\_card\_3 X0)) (k4\_card\_3 X0))\wedge \\ & (m1\_subset\_1 (k13\_prvect\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 (k4\_card\_3 X0) (k4\_card\_3 X0)) (k4\_card\_3 X0)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((m1\_subset\_1 \\ & X1 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\ & X0))))))\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 k1\_numbers \\ & X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers X0) X0))))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 k1\_numbers)\wedge \\ & (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))))\Rightarrow \\ & ((v1\_normsp\_1 (g1\_normsp\_1 X0 X1 X2 X3 X4))\wedge(l1\_normsp\_1 (g1\_normsp\_1 \\ & X0 X1 X2 X3 X4))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 \\ & X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0))))\Rightarrow(k10\_prvect\_2 X0 = \\ & g1\_rlvect\_1 (k4\_card\_3 (k4\_prvect\_2 X0)) (k8\_prvect\_2 X0) (k13\_prvect\_1 \\ & (k4\_prvect\_2 X0) (k6\_prvect\_2 X0) (k2\_prvect\_2 (k4\_prvect\_2 \\ & X0) k1\_numbers (k9\_prvect\_2 X0))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((\neg v1\_xboole\_0 \\ & X0)\wedge((v1\_finseq\_1 X0)\wedge(v2\_prvect\_2 X0))))\Rightarrow(\forall X1.((\neg \\ & v2\_struct\_0 X1)\wedge((v1\_normsp\_1 X1)\wedge(l1\_normsp\_1 X1)))\Rightarrow((X1 = \\ & k14\_prvect\_2 X0)\Leftrightarrow((g1\_rlvect\_1 (u1\_struct\_0 X1) (u2\_struct\_0 \\ & X1) (u1\_algstr\_0 X1) (u1\_rlvect\_1 X1) = k10\_prvect\_2 X0)\wedge(r1\_funct\_2 \\ & (u1\_struct\_0 X1) k1\_numbers (k4\_card\_3 (k4\_prvect\_2 X0)) k1\_numbers \\ & (u1\_normsp\_0 X1) (k13\_prvect\_2 X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v1\_finseq\_1 \\ & X0)\wedge(v2\_prvect\_2 X0))))\Rightarrow((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge \\ & ((v1\_finseq\_1 X0)\wedge(v1\_prvect\_2 X0)))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_normsp\_1 X0)\Rightarrow((v1\_normsp\_1 X0)\Rightarrow(X0 = g1\_normsp\_1 \\ & (u1\_struct\_0 X0) (u2\_struct\_0 X0) (u1\_algstr\_0 X0) (u1\_rlvect\_1 \\ & X0) (u1\_normsp\_0 X0))) \end{aligned} \quad (20)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (\neg v1\_xboole\_0 \\ X0) \wedge ((v1\_finseq\_1 X0) \wedge (v2\_prvect\_2 X0)))) \Rightarrow (k14\_prvect\_2 X0 = \\ g1\_normsp\_1 (k4\_card\_3 (k4\_prvect\_2 X0)) (k8\_prvect\_2 X0) (k13\_prvect\_1 \\ (k4\_prvect\_2 X0) (k6\_prvect\_2 X0)) (k2\_prvect\_2 (k4\_prvect\_2 \\ X0) k1\_numbers (k9\_prvect\_2 X0)) (k13\_prvect\_2 X0)) \end{aligned}$$