

t7_prvect_2

(TMK8oSAZc44eM1WKJbWhBEF_{xq}VvXZxJ2cq3)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k14_prvect_2 : \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k4_prvect_2 : \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_euclid : \iota \Rightarrow \iota$ be given. Let $k12_prvect_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_0 : \iota \Rightarrow o$ 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 $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Let $u1_normsp_0 : \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v1_xboole_0 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (k14_prvect_2 X0 = \\ & g1_normsp_1 (k4_card_3 (k4_prvect_2 X0)) (k8_prvect_2 X0) (k13_prvect_1 \\ & (k4_prvect_2 X0) (k6_prvect_2 X0)) (k2_prvect_2 (k4_prvect_2 \\ & X0) k1_numbers (k9_prvect_2 X0)) (k13_prvect_2 X0)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((m1_subset_1 \\ & X1 X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ & X0))))\wedge(((v1_funct_1 X3)\wedge((v1_funct_2 X3 (k2_zfmisc_1 k1_numbers \\ & X0) X0)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers X0) X0))))\wedge((v1_funct_1 X4)\wedge((v1_funct_2 X4 X0 k1_numbers)\wedge \\ & (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers))))))))))\Rightarrow \\ & (X0 X1 X2 X3 X4 = g1_normsp_1 X5 X6 X7 X8 X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = \\ & X7)\wedge((X3 = X8)\wedge(X4 = X9)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k2_zfmisc_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge(v1_funct_1 X0)))\Rightarrow (\neg v1_xboole_0 (k4_card_3 X0)) \quad (6)$$

Assume the following.

$$v3_membered k1_numbers \quad (7)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (8)$$

Assume the following.

$$\forall X0.(l2_normsp_0 X0)\Rightarrow((l1_normsp_0 X0)\wedge(l2_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l2_normsp_0 X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 \\ & X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0))))\Rightarrow(m1_prvect_2 (k9_prvect_2 \\ & X0) (k4_prvect_2 X0) k1_numbers) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0)))))\Rightarrow(m1_subset_1 (k8_prvect_2 X0) (k4_card_3 (k4_prvect_2 X0))) \quad (12)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0)))))\Rightarrow(m1_prvect_1 (k6_prvect_2 X0) (k4_prvect_2 X0)) \quad (13)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0)))))\Rightarrow((v1_relat_1 (k4_prvect_2 X0)\wedge((v2_relat_1 (k4_prvect_2 X0)\wedge((v1_funct_1 (k4_prvect_2 X0)\wedge((\neg v1_xboole_0 (k4_prvect_2 X0)\wedge(v1_finseq_1 (k4_prvect_2 X0)))))))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge(v1_finseq_1 X0)))))\wedge((\neg v1_xboole_0 X1)\wedge(m1_prvect_2 X2 X0 X1)))\Rightarrow((v1_funct_1 (k2_prvect_2 X0 X1 X2))\wedge((v1_funct_2 (k2_prvect_2 X0 X1 X2) (k2_zfmisc_1 X1 (k4_card_3 X0) (k4_card_3 X0))\wedge(m1_subset_1 (k2_prvect_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 (k4_card_3 X0) (k4_card_3 X0)))))))))) \quad (15)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v2_prvect_2 X0)))))\Rightarrow((\neg v2_struct_0 (k14_prvect_2 X0)\wedge((v1_normsp_1 (k14_prvect_2 X0)\wedge(l1_normsp_1 (k14_prvect_2 X0)))))) \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v2_prvect_2 X0)))))\Rightarrow((v1_funct_1 (k13_prvect_2 X0)\wedge((v1_funct_2 (k13_prvect_2 X0) (k4_card_3 (k4_prvect_2 X0) k1_numbers)\wedge(m1_subset_1 (k13_prvect_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (k4_card_3 (k4_prvect_2 X0) k1_numbers)))))))) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v1_xboole_0 X0) \wedge (v1_finseq_1 X0)))))) \wedge (m1_prvect_1 \\ & X1 X0)) \Rightarrow ((v1_funct_1 (k13_prvect_1 X0 X1)) \wedge ((v1_funct_2 (k13_prvect_1 \\ & X0 X1) (k2_zfmisc_1 (k4_card_3 X0) (k4_card_3 X0)) (k4_card_3 X0)) \wedge \\ & (m1_subset_1 (k13_prvect_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (\\ & k2_zfmisc_1 (k4_card_3 X0) (k4_card_3 X0)) (k4_card_3 X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_normsp_0 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k1_normsp_0 X0 X1 = k3_funct_2 \\ & (u1_struct_0 X0) k1_numbers (u1_normsp_0 X0) X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v1_xboole_0 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (\forall X1. ((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 (k4_card_3 (k4_prvect_2 X0)) k1_numbers) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k4_card_3 (k4_prvect_2 \\ & X0)) k1_numbers)))))) \Rightarrow ((X1 = k13_prvect_2 X0) \Leftrightarrow (\forall X2. (m1_subset_1 \\ & X2 (k4_card_3 (k4_prvect_2 X0)) \Rightarrow (k1_seq_1 X1 X2 = k12_euclid (\\ & k12_prvect_2 X0 X2)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_relat_1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_relat_1 X1)) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 \\ & X0) \wedge (v2_prvect_2 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge \\ & ((v1_finseq_1 X0) \wedge (v1_prvect_2 X0)))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3_membered X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_normsp_1 X0) \Rightarrow ((v1_normsp_1 X0) \Rightarrow (X0 = g1_normsp_1 \\ & (u1_struct_0 X0) (u2_struct_0 X0) (u1_algstr_0 X0) (u1_rlvect_1 \\ & X0) (u1_normsp_0 X0))) \end{aligned} \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v1_xboole_0 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 (k14_prvect_2 X0))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (k4_card_3 (k4_prvect_2 X0))) \Rightarrow ((X1 = X2) \Rightarrow (k1_normsp_0 (k14_prvect_2 \\ & X0) X1 = k12_euclid (k12_prvect_2 X0 X2)))))) \end{aligned}$$