

t36_clvect_3

(TMN428a3SfdBxSx8mbfbLaxRcBoav7vfDng)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v2_clvect_1 : \iota \Rightarrow o$ be given. Let $v3_clvect_1 : \iota \Rightarrow o$ be given. Let $v4_clvect_1 : \iota \Rightarrow o$ be given. Let $v5_clvect_1 : \iota \Rightarrow o$ be given. Let $v2_csspace : \iota \Rightarrow o$ be given. Let $l1_csspace : \iota \Rightarrow o$ 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 $k5_numbers : \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_series_1 : \iota \Rightarrow \iota$ be given. Let $k2_clvect_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k13_csspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_valued_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_series_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_seq1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_clvect_1 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\neg(\neg r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X1)))) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_clvect_1 X0) \wedge \\ ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge ((v5_clvect_1 X0) \wedge ((v2_csspace \\ X0) \wedge (l1_csspace X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (\\ u1_struct_0 X0)) \Rightarrow (r1_xreal_0 k6_numbers (k13_csspace X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_clvect_1 X0) \wedge \\ ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge ((v5_clvect_1 X0) \wedge ((v2_csspace \\ X0) \wedge (l1_csspace X0)))))))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 X1 \\ (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow \\ (v7_valued_0 (k3_series_1 (k2_clvect_2 X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xreal_0 \\ X0 X1) \wedge (v3_xreal_0 X1)) \Rightarrow (v3_xreal_0 X0))) \quad (5)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow \\ ((v7_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow \\ (r1_xreal_0 (k8_nat_1 k1_numbers X0 k6_numbers) (k8_nat_1 k1_numbers \\ X0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1) \wedge ((v1_funct_2 \\ X1 k5_numbers X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ X0)))) \wedge (v7_ordinal1 X2)) \Rightarrow (k8_nat_1 X0 X1 X2 = k1_funct_1 X1 X2)) \end{aligned} \quad (9)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (10)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ (k3_series_1 X0 = k2_series_1 X0) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (13)$$

Assume the following.

$$\exists X0. (v1_xboole_0 X0) \wedge ((v1_xcmplx_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (v1_xreal_0 X0))) \quad (14)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (v1_xreal_0 (k1_funct_1 X0 X1)) \quad (16)$$

Assume the following.

$$v3_membered k1_numbers \quad (17)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (18)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (19)$$

Assume the following.

$$\forall X0. (l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (20)$$

Assume the following.

$$\forall X0. (l1_csspace X0) \Rightarrow (l1_clvect_1 X0) \quad (21)$$

Assume the following.

$$\forall X0. (l1_clvect_1 X0) \Rightarrow (l2_algstr_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0)\Rightarrow(l1_struct_0 X0) \quad (23)$$

Assume the following.

$$m2_subset_1 k6_numbers k1_numbers k5_numbers \quad (24)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (25)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k1_numbers)\wedge \\ &(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers))))\Rightarrow \\ &((v1_funct_1 (k3_series_1 X0))\wedge((v1_funct_2 (k3_series_1 X0) \\ &k5_numbers k1_numbers)\wedge(m1_subset_1 (k3_series_1 X0) (k1_zfmisc_1 \\ &(k2_zfmisc_1 k5_numbers k1_numbers)))))) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge \\ &((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v2_clvect_1 \\ &X0)\wedge((v3_clvect_1 X0)\wedge((v4_clvect_1 X0)\wedge((v5_clvect_1 X0)\wedge \\ &((v2_csspace X0)\wedge(l1_csspace X0))))))))))\wedge((v1_funct_1 X1)\wedge \\ &((v1_funct_2 X1 k5_numbers (u1_struct_0 X0))\wedge(m1_subset_1 X1 \\ &(k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0))))))\Rightarrow \\ &((v1_funct_1 (k2_clvect_2 X0 X1))\wedge((v1_funct_2 (k2_clvect_2 \\ &X0 X1) k5_numbers k1_numbers)\wedge(m1_subset_1 (k2_clvect_2 X0 X1) \\ &(k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \end{aligned} \quad (27)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(l1_struct_0 \\ &X0))\wedge(((v1_funct_1 X1)\wedge((v1_funct_2 X1 k5_numbers (u1_struct_0 \\ &X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\ &X0))))))\wedge(m1_subset_1 X2 k5_numbers)))\Rightarrow(m1_subset_1 (k1_normsp_1 \\ &X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (28)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_clvect_1 X0) \wedge \\
& ((v3_clvect_1 X0) \wedge ((v4_clvect_1 X0) \wedge ((v5_clvect_1 X0) \wedge ((v2_csspace \\
& X0) \wedge (l1_csspace X0)))))))))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0)) \wedge (m1_subset_1 X1 \\
& (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0)))))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& ((X2 = k2_clvect_2 X0 X1) \Leftrightarrow (\forall X3.(m2_subset_1 X3 k1_numbers \\
& k5_numbers) \Rightarrow (k1_seq_1 X2 X3 = k13_csspace X0 (k1_normsp_1 X0 X1 \\
& X3))))))
\end{aligned} \tag{29}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\
& X0) \wedge ((v1_partfun1 X0 k5_numbers) \wedge (v1_valued_0 X0)))))) \Rightarrow (\forall X1. \\
& ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v1_funct_1 X1) \wedge \\
& ((v1_partfun1 X1 k5_numbers) \wedge (v1_valued_0 X1)))))) \Rightarrow ((X1 = k2_series_1 \\
& X0) \Leftrightarrow ((k1_funct_1 X1 k6_numbers = k1_funct_1 X0 k6_numbers) \wedge (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (k1_funct_1 X1 (k2_nat_1 \\
& X2 np_1) = k2_xcmplx_0 (k1_funct_1 X1 X2) (k1_funct_1 X0 (k2_nat_1 \\
& X2 np_1))))))
\end{aligned} \tag{30}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{31}$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v3_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 \\
X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v2_xxreal_0 X0))) \tag{32}$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v1_membered X0) \tag{33}$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 \\
X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \tag{34}$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 \\
X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v1_funct_2 X2 X0 X1) \Rightarrow (\\
v1_partfun1 X2 X0))) \tag{35}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (36)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (37)$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered X1)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v3_valued_0 X2)) \quad (38)$$

Assume the following.

$$\forall X0.\forall X1.(v1_membered X1)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_valued_0 X2)) \quad (39)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v13_algstr_0 X0)\wedge((v2_rlvect_1 X0)\wedge((v3_rlvect_1 X0)\wedge((v4_rlvect_1 X0)\wedge((v2_clvect_1 X0)\wedge \\ & ((v3_clvect_1 X0)\wedge((v4_clvect_1 X0)\wedge((v5_clvect_1 X0)\wedge((v2_csspace X0)\wedge(l1_csspace X0))))))))))\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge \\ & ((v1_funct_2 X1 k5_numbers (u1_struct_0 X0))\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 X0))))))\Rightarrow \\ & (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers)\Rightarrow(r1_xxreal_0 k6_numbers (k8_nat_1 k1_numbers (k3_series_1 (k2_clvect_2 X0 X1)) X2)))) \end{aligned}$$