

t9_vectmetr
(TMG56hoE39wmLi8imssStDhuhfHrmoNhS2L)

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Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ 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 $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $k4_vectmetr : \iota \Rightarrow \iota$ be given. Let $v2_funct.2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_vectmetr : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc.1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple.0 : \iota \Rightarrow \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $v1_relat.1 : \iota \Rightarrow o$ be given. Let $v5_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct.0 : \iota \Rightarrow o$ be given. Let $v13_algstr.0 : \iota \Rightarrow o$ be given. Let $v6_metric.1 : \iota \Rightarrow o$ be given. Let $v7_metric.1 : \iota \Rightarrow o$ be given. Let $v8_metric.1 : \iota \Rightarrow o$ be given. Let $v9_metric.1 : \iota \Rightarrow o$ 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 $v5_rlvect.1 : \iota \Rightarrow o$ be given. Let $v6_rlvect.1 : \iota \Rightarrow o$ be given. Let $v7_rlvect.1 : \iota \Rightarrow o$ be given. Let $v8_rlvect.1 : \iota \Rightarrow o$ be given. Let $v4_vectmetr : \iota \Rightarrow o$ be given. Let $v5_vectmetr : \iota \Rightarrow o$ be given. Let $v6_vectmetr : \iota \Rightarrow o$ be given. Let $l1_vectmetr : \iota \Rightarrow o$ be given. Let $r1_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $u1_metric.1 : \iota \Rightarrow \iota$ be given. Let $k13_euclid : \iota \Rightarrow \iota$ be given. Let $k4_struct.0 : \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $m2_finseq.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_binop.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_algstr.0 : \iota \Rightarrow \iota$ be given. Let $k7_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_rlvect.1 : \iota \Rightarrow \iota$ be given. Let $k9_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat.1 X1) \wedge (v5_relat.1 X1 X0)) \Rightarrow (k2_relset.1 X0 X1 = k10_xtuple.0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (& (\neg v2_struct_0 (k4_vectmetr \\ X0)) \wedge (& (v13_algstr_0 (k4_vectmetr X0)) \wedge ((v6_metric_1 (k4_vectmetr \\ X0)) \wedge ((v7_metric_1 (k4_vectmetr X0)) \wedge ((v8_metric_1 (k4_vectmetr \\ X0)) \wedge ((v9_metric_1 (k4_vectmetr X0)) \wedge ((v2_rlvect_1 (k4_vectmetr \\ X0)) \wedge ((v3_rlvect_1 (k4_vectmetr X0)) \wedge ((v4_rlvect_1 (k4_vectmetr \\ X0)) \wedge ((v5_rlvect_1 (k4_vectmetr X0)) \wedge ((v6_rlvect_1 (k4_vectmetr \\ X0)) \wedge ((v7_rlvect_1 (k4_vectmetr X0)) \wedge ((v8_rlvect_1 (k4_vectmetr \\ X0)) \wedge ((v4_vectmetr (k4_vectmetr X0)) \wedge ((v5_vectmetr (k4_vectmetr \\ X0)) \wedge ((v6_vectmetr (k4_vectmetr X0)) \wedge (l1_vectmetr (k4_vectmetr \\ X0)))))))))))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (& (\forall X1.((\neg v2_struct_0 \\ X1) \wedge (& (v13_algstr_0 X1) \wedge ((v6_metric_1 X1) \wedge ((v7_metric_1 X1) \wedge \\ ((v8_metric_1 X1) \wedge ((v9_metric_1 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 \\ X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 X1) \wedge \\ ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v4_vectmetr X1) \wedge ((v5_vectmetr \\ X1) \wedge ((v6_vectmetr X1) \wedge (l1_vectmetr X1)))))))))))))))))) \Rightarrow ((\\ X1 = k4_vectmetr X0) \Leftrightarrow (& (u1_struct_0 X1 = k1_euclid X0) \wedge ((r1_funct_2 \\ (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X1)) k1_numbers (k2_zfmisc_1 \\ (k1_euclid X0) (k1_euclid X0)) k1_numbers (u1_metric_1 X1) (k13_euclid \\ X0)) \wedge ((k4_struct_0 X1 = k5_euclid X0) \wedge ((\forall X2.(m2_finseq_2 \\ X2 k1_numbers (k1_euclid X0)) \Rightarrow (\forall X3.(m2_finseq_2 X3 k1_numbers \\ (k1_euclid X0)) \Rightarrow (k1_binop_1 (u1_algstr_0 X1) X2 X3 = k7_euclid \\ X0 X2 X3))) \wedge (\forall X2.(m2_finseq_2 X2 k1_numbers (k1_euclid \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow (k1_binop_1 (u1_rlvect_1 \\ X1) X3 X2 = k9_euclid X0 X2 X3)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (v2_funct_2 X1 X0) \Leftrightarrow (k2_relset_1 X0 X1 = X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (6)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ X1) \wedge ((v1_funct_2 X1 (u1_struct_0 (k4_vectmetr X0)) (u1_struct_0 \\ (k4_vectmetr X0))) \wedge ((v2_funct_2 X1 (u1_struct_0 (k4_vectmetr \\ X0))) \wedge ((v3_vectmetr X1 (k4_vectmetr X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 (k4_vectmetr X0)) (u1_struct_0 (k4_vectmetr \\ X0)))))))))) \Rightarrow (k10_xtuple_0 X1 = k1_euclid X0)) \end{aligned}$$