

t13_real_ns1
(TMT56nDyXkqiJVLfPz8Vf1yNrHxe62dTZPB)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k7_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k3_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ 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 $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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 $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_bhsp_1 : \iota \Rightarrow o$ be given. Let $v2_bhsp_1 : \iota \Rightarrow o$ be given. Let $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $l1_bhsp_1 : \iota \Rightarrow o$ be given. Let $k2_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k1_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $u1_bhsp_1 : \iota \Rightarrow \iota$ be given. Let $k6_real_ns1 : \iota \Rightarrow \iota$ be given. Let $u1_normsp_0 : \iota \Rightarrow \iota$ be given. Let $k3_real_ns1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\
& (k4_algstr_0 X0 X1 = k1_rlvect_1 X0 X1 (k1_real_1 np_1)))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 \ X1) \wedge (\neg v1_xboole_0 \ X3) \wedge (((v1_funct_1 \ X4) \wedge ((\\ & v1_funct_2 \ X4 \ X0 \ X1) \wedge (m1_subset_1 \ X4 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ X1)))))) \wedge ((v1_funct_1 \ X5) \wedge ((v1_funct_2 \ X5 \ X2 \ X3) \wedge (m1_subset_1 \\ & X5 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X2 \ X3)))))) \Rightarrow ((r1_funct_2 \ X0 \ X1 \\ & X2 \ X3 \ X4 \ X5) \Leftrightarrow (X4 = X5)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v2_rlvect_1 \ X0) \wedge (l1_algstr_0 \\ & X0)) \wedge ((m1_subset_1 \ X1 \ (u1_struct_0 \ X0)) \wedge (m1_subset_1 \ X2 \ (u1_struct_0 \\ & X0)))) \Rightarrow (k3_rlvect_1 \ X0 \ X1 \ X2 = k1_algstr_0 \ X0 \ X1 \ X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 \ X0) \Rightarrow ((\neg v2_struct_0 \ (k7_real_ns1 \ X0)) \wedge \\ & ((v13_algstr_0 \ (k7_real_ns1 \ X0)) \wedge ((v2_rlvect_1 \ (k7_real_ns1 \\ & X0)) \wedge ((v3_rlvect_1 \ (k7_real_ns1 \ X0)) \wedge ((v4_rlvect_1 \ (k7_real_ns1 \\ & X0)) \wedge ((v5_rlvect_1 \ (k7_real_ns1 \ X0)) \wedge ((v6_rlvect_1 \ (k7_real_ns1 \\ & X0)) \wedge ((v7_rlvect_1 \ (k7_real_ns1 \ X0)) \wedge ((v8_rlvect_1 \ (k7_real_ns1 \\ & X0)) \wedge ((v1_bhspl_1 \ (k7_real_ns1 \ X0)) \wedge (v2_bhspl_1 \ (k7_real_ns1 \\ & X0)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 \ X0) \Rightarrow ((\neg v2_struct_0 \ (k4_real_ns1 \ X0)) \wedge \\ & ((v13_algstr_0 \ (k4_real_ns1 \ X0)) \wedge ((v2_rlvect_1 \ (k4_real_ns1 \\ & X0)) \wedge ((v3_rlvect_1 \ (k4_real_ns1 \ X0)) \wedge ((v4_rlvect_1 \ (k4_real_ns1 \\ & X0)) \wedge ((v5_rlvect_1 \ (k4_real_ns1 \ X0)) \wedge ((v6_rlvect_1 \ (k4_real_ns1 \\ & X0)) \wedge ((v7_rlvect_1 \ (k4_real_ns1 \ X0)) \wedge ((v8_rlvect_1 \ (k4_real_ns1 \\ & X0)) \wedge ((v3_normsp_0 \ (k4_real_ns1 \ X0)) \wedge ((v4_normsp_0 \ (k4_real_ns1 \\ & X0)) \wedge ((v1_normsp_1 \ (k4_real_ns1 \ X0)) \wedge (v2_normsp_1 \ (k4_real_ns1 \\ & X0)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. (v7_ordinal1 \ X0) \Rightarrow (\neg v1_xboole_0 \ (k1_euclid \ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_rlvect_1 X0) \Rightarrow & ((v1_funct_1 (u1_rlvect_1 X0)) \wedge \\ & ((v1_funct_2 (u1_rlvect_1 X0) (k2_zfmisc_1 k1_numbers (u1_struct_0 \\ & X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u1_rlvect_1 X0) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 k1_numbers (u1_struct_0 X0)) (u1_struct_0 \\ & X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_algstr_0 X0) \Rightarrow & ((v1_funct_1 (u1_algstr_0 X0)) \wedge \\ & ((v1_funct_2 (u1_algstr_0 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u1_algstr_0 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0) \Rightarrow (l2_algstr_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l2_normsp_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1_bhsp_1 X0) \Rightarrow (l1_rlvect_1 X0) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow & ((\neg v2_struct_0 (k7_real_ns1 X0)) \wedge \\ & ((v1_bhsp_1 (k7_real_ns1 X0)) \wedge (l1_bhsp_1 (k7_real_ns1 X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow & ((\neg v2_struct_0 (k4_real_ns1 X0)) \wedge \\ & ((v1_normsp_1 (k4_real_ns1 X0)) \wedge (l1_normsp_1 (k4_real_ns1 X0)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow & ((v1_funct_1 (k2_real_ns1 X0)) \wedge \\ & ((v1_funct_2 (k2_real_ns1 X0) (k2_zfmisc_1 k1_numbers (k1_euclid \\ & X0)) (k1_euclid X0)) \wedge (m1_subset_1 (k2_real_ns1 X0) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 k1_numbers (k1_euclid X0)) (k1_euclid \\ & X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow ((v1_funct_1\ (k1_real_ns1\ X0)) \wedge \\ & ((v1_funct_2\ (k1_real_ns1\ X0)\ (k2_zfmisc_1\ (k1_euclid\ X0)\ (k1_euclid \\ & X0))\ (k1_euclid\ X0)) \wedge (m1_subset_1\ (k1_real_ns1\ X0)\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ (k2_zfmisc_1\ (k1_euclid\ X0)\ (k1_euclid\ X0))\ (k1_euclid \\ & X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (m1_subset_1\ (k1_real_1\ X0)\ k1_numbers) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\ & ((v1_bhsp_1\ X1) \wedge (l1_bhsp_1\ X1))) \Rightarrow ((X1 = k7_real_ns1\ X0) \Leftrightarrow ((u1_struct_0 \\ & X1 = k1_euclid\ X0) \wedge ((k4_struct_0\ X1 = k5_euclid\ X0) \wedge ((r1_funct_2 \\ & (k2_zfmisc_1\ (u1_struct_0\ X1)\ (u1_struct_0\ X1))\ (u1_struct_0 \\ & X1)\ (k2_zfmisc_1\ (k1_euclid\ X0)\ (k1_euclid\ X0))\ (k1_euclid\ X0) \\ & (u1_algstr_0\ X1)\ (k1_real_ns1\ X0)) \wedge (r1_funct_2\ (k2_zfmisc_1 \\ & k1_numbers\ (u1_struct_0\ X1))\ (u1_struct_0\ X1)\ (k2_zfmisc_1\ k1_numbers \\ & (k1_euclid\ X0))\ (k1_euclid\ X0)\ (u1_rlvect_1\ X1)\ (k2_real_ns1\ X0)) \wedge \\ & (r1_funct_2\ (k2_zfmisc_1\ (u1_struct_0\ X1)\ (u1_struct_0\ X1))\ k1_numbers \\ & (k2_zfmisc_1\ (k1_euclid\ X0)\ (k1_euclid\ X0))\ k1_numbers\ (u1_bhsp_1 \\ & X1)\ (k6_real_ns1\ X0)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge \\ & ((v1_normsp_1\ X1) \wedge (l1_normsp_1\ X1))) \Rightarrow ((X1 = k4_real_ns1\ X0) \Leftrightarrow \\ & ((u1_struct_0\ X1 = k1_euclid\ X0) \wedge ((k4_struct_0\ X1 = k5_euclid\ X0) \wedge \\ & ((r1_funct_2\ (k2_zfmisc_1\ (u1_struct_0\ X1)\ (u1_struct_0\ X1)) \\ & (u1_struct_0\ X1)\ (k2_zfmisc_1\ (k1_euclid\ X0)\ (k1_euclid\ X0))\ (\\ & k1_euclid\ X0)\ (u1_algstr_0\ X1)\ (k1_real_ns1\ X0)) \wedge (r1_funct_2 \\ & (k2_zfmisc_1\ k1_numbers\ (u1_struct_0\ X1))\ (u1_struct_0\ X1)\ (k2_zfmisc_1 \\ & k1_numbers\ (k1_euclid\ X0))\ (k1_euclid\ X0)\ (u1_rlvect_1\ X1)\ (k2_real_ns1 \\ & X0)) \wedge (r1_funct_2\ (u1_struct_0\ X1)\ k1_numbers\ (k1_euclid\ X0)\ k1_numbers \\ & (u1_normsp_0\ X1)\ (k3_real_ns1\ X0)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_rlvect_1\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.(v1_xreal_0\ X2) \Rightarrow \\ & (k1_rlvect_1\ X0\ X1\ X2 = k1_binop_1\ (u1_rlvect_1\ X0)\ X2\ X1))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_algstr_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k1_algstr_0 \\ & X0 X1 X2 = k5_binop_1 (u1_struct_0 X0) (u1_algstr_0 X0) X1 X2))) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (23)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 (k4_real_ns1 X0))) \Rightarrow \\ & (\forall X3.(m1_subset_1 X3 (u1_struct_0 (k4_real_ns1 X0))) \Rightarrow \\ & (\forall X4.(m1_subset_1 X4 (u1_struct_0 (k7_real_ns1 X0))) \Rightarrow \\ & (\forall X5.(m1_subset_1 X5 (u1_struct_0 (k7_real_ns1 X0))) \Rightarrow \\ & (((X2 = X4) \wedge (X3 = X5)) \Rightarrow ((k3_rlvect_1 (k4_real_ns1 X0) X2 X3 = k3_rlvect_1 \\ & (k7_real_ns1 X0) X4 X5) \wedge ((k4_algstr_0 (k4_real_ns1 X0) X2 = k4_algstr_0 \\ & (k7_real_ns1 X0) X4) \wedge (k1_rlvect_1 (k4_real_ns1 X0) X2 X1 = k1_rlvect_1 \\ & (k7_real_ns1 X0) X4 X1)))))))))) \end{aligned}$$