

l105_toprealb (TMZbWt-
WooG6G9C6L3QT18fQad3gBqBpGbcd)

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Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_topalg_2 : \iota$ be given. Let $k5_toprealb : \iota \Rightarrow \iota$ be given. Let $k1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $c33_toprealb : \iota$ be given. Let $c25_toprealb : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k4_sin_cos6 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k3_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k6_toprealb : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$k1_relset_1 \ k1_numbers \ k4_sin_cos6 = k1_rcomp_1 \ (k1_real_1 \ np_1) \ np_1 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 \ X1) \Rightarrow ((r1_tarski \ X0 \ (k9_xtuple_0 \ X1)) \Rightarrow (k9_xtuple_0 \ (k5_relat_1 \ X1 \ X0) = X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1_xxreal_0 \ X0) \Rightarrow (\forall X1. (v1_xxreal_0 \ X1) \Rightarrow (\forall X2. \\ (v1_xxreal_0 \ X2) \Rightarrow (\forall X3. (v1_xxreal_0 \ X3) \Rightarrow (((r1_xxreal_0 \\ X0 \ X1) \wedge (r1_xxreal_0 \ X2 \ X3)) \Rightarrow (r1_tarski \ (k2_xxreal_1 \ X1 \ X2) \ (k1_xxreal_1 \\ X0 \ X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$r1_xxreal_0 \ (k4_xcmplx_0 \ np_1) \ (k4_xcmplx_0 \ np_1) \quad (5)$$

Assume the following.

$$r1_xxreal_0 \ np_1 \ np_1 \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xxreal_0 \ X1)) \Rightarrow (k3_rcomp_1 \ X0 \ X1 = k2_xxreal_1 \ X0 \ X1) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 \ X2) \wedge \\ & (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))) \Rightarrow (k2_partfun1 \\ & \ X0 \ X1 \ X2 \ X3 = k5_relat_1 \ X2 \ X3) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 \ X1) \wedge (v4_relat_1 \ X1 \ X0)) \Rightarrow (k1_relset_1 \ X0 \ X1 = k9_xtuple_0 \ X1) \quad (9)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (k1_real_1 \ X0 = k4_xcmplx_0 \ X0) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xreal_0 \ X1)) \Rightarrow (k1_rcomp_1 \ X0 \ X1 = k1_xxreal_1 \ X0 \ X1) \quad (11)$$

Assume the following.

$$(v1_funct_1 \ k4_sin_cos6) \wedge (m1_subset_1 \ k4_sin_cos6 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers))) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 \ X2) \wedge \\ & (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))) \Rightarrow ((v1_funct_1 \\ & (k2_partfun1 \ X0 \ X1 \ X2 \ X3)) \wedge (m1_subset_1 \ (k2_partfun1 \ X0 \ X1 \ X2 \ X3) \\ & (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (m1_subset_1 (k1_real_1 X0) k1_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1 c33_toprealb) \wedge ((v1_funct_2 c33_toprealb (u1_struct_0 \\ & (k1_pre_topc k2_topalg_2 (k5_toprealb (k1_rcomp_1 (k1_real_1 \\ & np_1) np_1)))) (u1_struct_0 (k1_pre_topc k2_topalg_2 (k5_toprealb \\ & (k1_rcomp_1 k6_numbers k32_sin_cos)))))) \wedge ((v5_pre_topc c33_toprealb \\ & (k1_pre_topc k2_topalg_2 (k5_toprealb (k1_rcomp_1 (k1_real_1 \\ & np_1) np_1))) (k1_pre_topc k2_topalg_2 (k5_toprealb (k1_rcomp_1 \\ & k6_numbers k32_sin_cos)))) \wedge (m1_subset_1 c33_toprealb (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 (k1_pre_topc k2_topalg_2 (k5_toprealb \\ & (k1_rcomp_1 (k1_real_1 np_1) np_1)))) (u1_struct_0 (k1_pre_topc \\ & k2_topalg_2 (k5_toprealb (k1_rcomp_1 k6_numbers k32_sin_cos))))))))) \end{aligned} \quad (15)$$

Assume the following.

$$(\neg v1_xboole_0 c25_toprealb) \wedge (m1_subset_1 c25_toprealb (k1_zfmisc_1 k1_numbers)) \quad (16)$$

Assume the following.

$$c33_toprealb = k6_toprealb k4_sin_cos6 \quad (17)$$

Assume the following.

$$c25_toprealb = k3_rcomp_1 (k1_real_1 np_1) np_1 \quad (18)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (k6_toprealb X0 = X0) \quad (19)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)) \Rightarrow (k5_toprealb X0 = X0) \quad (20)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (22)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (24)$$

Theorem 1

$$\begin{aligned} & k1_relset_1 (u1_struct_0 (k1_pre_topc k2_topalg_2 (k5_toprealb \\ & (k1_rcomp_1 (k1_real_1 np_1) np_1)))) (k2_partfun1 (u1_struct_0 \\ & (k1_pre_topc k2_topalg_2 (k5_toprealb (k1_rcomp_1 (k1_real_1 \\ & np_1) np_1)))) (u1_struct_0 (k1_pre_topc k2_topalg_2 (k5_toprealb \\ & (k1_rcomp_1 k6_numbers k32_sin_cos)))) c33_toprealb (k5_toprealb \\ & c25_toprealb)) = c25_toprealb \end{aligned}$$