

t47_comp trig
(TMLLko9RGwwxhF93BEqnb3pcaiAj2LZC3UX)

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Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k4_complex1 : \iota \Rightarrow \iota$ be given. Let $k18_sin_cos : \iota \Rightarrow \iota$ be given. Let $k1_comp trig : \iota \Rightarrow \iota$ be given. Let $k21_sin_cos : \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $np_2 : \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k20_sin_cos : \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k17_sin_cos : \iota \Rightarrow \iota$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_complex1 : \iota \Rightarrow \iota$ be given. Let $k7_complex1 : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k1_xcmplx_0 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & (k21_sin_cos (k10_real_1 k32_sin_cos np_2) = k6_numbers) \wedge ((\\
 & k18_sin_cos (k10_real_1 k32_sin_cos np_2) = np_1) \wedge ((k21_sin_cos \\
 & k32_sin_cos = k1_real_1 np_1) \wedge ((k18_sin_cos k32_sin_cos = k6_numbers) \wedge \\
 & ((k21_sin_cos (k7_real_1 k32_sin_cos (k10_real_1 k32_sin_cos \\
 & np_2)) = k6_numbers) \wedge ((k18_sin_cos (k7_real_1 k32_sin_cos (\\
 & k10_real_1 k32_sin_cos np_2)) = k1_real_1 np_1) \wedge ((k21_sin_cos \\
 & (k8_real_1 np_2 k32_sin_cos) = np_1) \wedge (k18_sin_cos (k8_real_1 \\
 & np_2 k32_sin_cos) = k6_numbers))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (v1_xcmplx_0 X0) \Rightarrow (\neg(\neg(r1_xxreal_0 (k4_complex1 X0) \\
 & k6_numbers) \wedge (r1_xxreal_0 (k18_sin_cos (k1_comp trig X0)) k6_numbers))
 \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((\neg r1_xreal_0 k6_numbers X0) \Rightarrow (k1_comp trig X0 = k32_sin_cos)) \quad (4)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((r1_xreal_0 k6_numbers X0) \Rightarrow (k1_comp trig X0 = k6_numbers)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow & ((k21_sin_cos k6_numbers = np_1) \wedge \\ & ((k18_sin_cos k6_numbers = k6_numbers) \wedge ((k20_sin_cos (k4_xcmplx_0 \\ & X0) = k20_sin_cos X0) \wedge (k17_sin_cos (k4_xcmplx_0 X0) = k4_xcmplx_0 \\ & (k17_sin_cos X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xreal_0 X0 X1) \wedge (v3_xreal_0 X1)) \Rightarrow (v3_xreal_0 X0))) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 X0 k6_numbers = k6_numbers) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xreal_0 X0 X1) \wedge (v2_xreal_0 X0)) \Rightarrow (v2_xreal_0 X1))) \quad (9)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 (k3_complex1 X0) (k3_xcmplx_0 (k4_complex1 X0) k7_complex1) = X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 X0 (k4_xcmplx_0 np_1) = k4_xcmplx_0 X0) \quad (12)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(k7_real_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (14)$$

Assume the following.

$$k7_complex1 = k1_xcmplx_0 \quad (15)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (16)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (17)$$

Assume the following.

$$v1_xcmplx_0 k1_xcmplx_0 \quad (18)$$

Assume the following.

$$\forall X0.((\neg v3_xxreal_0 X0)\wedge(v1_xreal_0 X0))\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge(\neg v2_xxreal_0 (k4_xcmplx_0 X0))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k7_real_1 X0 X1) k1_numbers) \quad (20)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(m1_subset_1 (k4_complex1 X0) k1_numbers) \quad (22)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(m1_subset_1 (k3_complex1 X0) k1_numbers) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(m1_subset_1 (k1_comptrig X0) k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(m1_subset_1 (k18_sin_cos X0) k1_numbers) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow((r1_xxreal_0 X0 X1)\vee(r1_xxreal_0 X1 X0)) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k3_xcmplx_0 X0 X1 = k3_xcmplx_0 X1 X0) \quad (27)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge((\neg v2_xxreal_0 X0)\wedge(\neg v3_xxreal_0 X0)))\Rightarrow((v1_xboole_0 X0)\wedge(v1_xxreal_0 X0)) \quad (28)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers))\Rightarrow(v3_membered X0) \quad (29)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (30)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xcmplx_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_numbers)\Rightarrow(\neg v3_xxreal_0 X0) \quad (32)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (33)$$

Assume the following.

$$\forall X0.(v3_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow (v1_xreal_0 X1)) \quad (34)$$

Theorem 1

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow((r1_xxreal_0 k6_numbers (k4_complex1 X0))\Rightarrow(r1_xxreal_0 k6_numbers (k18_sin_cos (k1_comptrig X0))))$$