

t49_comp trig
(TMKUKkY4LWDwEkH28EZKPHUadP4ppud6Kdy)

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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 $k3_complex1 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k21_sin_cos : \iota \Rightarrow \iota$ be given. Let $k1_comp trig : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k2_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k4_complex1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $np_0 : \iota$ be given. Let $k1_xcmplx_0 : \iota$ be given. Let $k20_sin_cos : \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\neg(X0 \in k2_rcomp_1 k6_numbers (k10_real_1 k32_sin_cos np_2)) \wedge (r1_xxreal_0 (k1_seq_1 k19_sin_cos X0) k6_numbers)) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((v1_xboole_0 X0) \vee ((v2_xxreal_0 X1) \vee (v3_xxreal_0 X0)))))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))))) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xcmplx_0 X0) \Rightarrow & ((k1_comp trig X0 \in k2_rcomp_1 (k8_real_1 \\ & (k10_real_1 np_3 np_2) k32_sin_cos) (k8_real_1 np_2 k32_sin_cos)) \Leftrightarrow \\ & ((\neg r1_xxreal_0 (k3_complex1 X0) k6_numbers) \wedge (\neg r1_xxreal_0 k6_numbers \\ & (k4_complex1 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xcmplx_0 X0) \Rightarrow & ((k1_comp trig X0 \in k2_rcomp_1 k6_numbers \\ & (k10_real_1 k32_sin_cos np_2)) \Leftrightarrow ((\neg r1_xxreal_0 (k3_complex1 \\ & X0) k6_numbers) \wedge (\neg r1_xxreal_0 (k4_complex1 X0) k6_numbers))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow & (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg (r1_xxreal_0 \\ & X0 X1) \wedge ((\neg v3_xxreal_0 X0) \wedge (v3_xxreal_0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow & ((r1_xxreal_0 k6_numbers \\ & X0) \Rightarrow (k1_comp trig X0 = k6_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow & ((k1_seq_1 k19_sin_cos k6_numbers = \\ & np_1) \wedge ((k1_seq_1 k16_sin_cos k6_numbers = k6_numbers) \wedge ((k1_seq_1 \\ & k19_sin_cos (k4_xcmplx_0 X0) = k1_seq_1 k19_sin_cos X0) \wedge (k1_seq_1 \\ & k16_sin_cos (k4_xcmplx_0 X0) = k1_real_1 (k1_seq_1 k16_sin_cos \\ & X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 k6_numbers = X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow & (\neg (X0 \in k2_rcomp_1 (k8_real_1 (k10_real_1 \\ & np_3 np_2) k32_sin_cos) (k8_real_1 np_2 k32_sin_cos)) \wedge (r1_xxreal_0 \\ & (k1_seq_1 k19_sin_cos X0) k6_numbers)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xcmplx_0 X0) \Rightarrow & (k2_xcmplx_0 (k3_complex1 X0) (k3_xcmplx_0 \\ & (k4_complex1 X0) k7_complex1) = X0) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (13)$$

Assume the following.

$$(m2_subset_1\ np_0\ k1_numbers\ k5_numbers) \wedge ((m1_subset_1\ np_0\ k5_numbers) \wedge (m1_subset_1\ np_0\ k1_numbers)) \quad (14)$$

Assume the following.

$$v1_xboole_0\ np_0 \quad (15)$$

Assume the following.

$$k4_xcmplx_0\ np_0 = np_0 \quad (16)$$

Assume the following.

$$k3_xcmplx_0\ np_0\ k1_xcmplx_0 = np_0 \quad (17)$$

Assume the following.

$$k7_complex1 = k1_xcmplx_0 \quad (18)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (19)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (k21_sin_cos\ X0 = k20_sin_cos\ X0) \quad (20)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0) \Rightarrow (v1_xreal_0\ (k20_sin_cos\ X0)) \quad (21)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (22)$$

Assume the following.

$$\forall X0.((\neg v3_xreal_0\ X0) \wedge (v1_xreal_0\ X0)) \Rightarrow ((v1_xcmplx_0\ (k4_xcmplx_0\ X0)) \wedge (\neg v2_xreal_0\ (k4_xcmplx_0\ X0))) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (m1_subset_1\ (k4_complex1\ X0)\ k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (m1_subset_1\ (k3_complex1\ X0)\ k1_numbers) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (m1_subset_1 (k1_comptrig X0) k1_numbers) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (k20_sin_cos X0 = k1_seq_1 k19_sin_cos X0) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0) \quad (28)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v1_membered X0) \quad (29)$$

Assume the following.

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

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\neg v3_xxreal_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (32)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (33)$$

Assume the following.

$$\forall X0.(v1_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xcmplx_0 X1)) \quad (34)$$

Theorem 1

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (\neg(\neg r1_xxreal_0 (k3_complex1 X0) k6_numbers) \wedge (r1_xxreal_0 (k21_sin_cos (k1_comptrig X0)) k6_numbers))$$