

l11_comp trig

(TMHVyN6ciQSvHEdesmU4owF62yvz4FTKk1J)

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Let $k7_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $np_2 : \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $v1_xcmplx.0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xcmplx.0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_xcmplx.0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_xcmplx.0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal.0 : \iota \Rightarrow o$ be given. Let $k31_sin_cos : \iota$ be given. Assume the following.

$$\forall X0.(v1_xcmplx.0 X0) \Rightarrow (k3_xcmplx.0 np_1 X0 = X0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xcmplx.0 X0) \wedge ((v1_xcmplx.0 X1) \wedge (v1_xcmplx.0 X2))) \Rightarrow (k2_xcmplx.0 (k2_xcmplx.0 X0 X1) X2 = k2_xcmplx.0 X0 (k2_xcmplx.0 X1 X2)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xcmplx.0 X0) \wedge ((v1_xcmplx.0 X1) \wedge (v1_xcmplx.0 X2))) \Rightarrow (k3_xcmplx.0 (k2_xcmplx.0 X0 X1) X2 = k2_xcmplx.0 (k3_xcmplx.0 X0 X2) (k3_xcmplx.0 X1 X2)) \quad (3)$$

Assume the following.

$$((v2_xxreal.0 np_3) \wedge (m2_subset.1 np_3 k1_numbers k5_numbers)) \wedge ((m1_subset.1 np_3 k5_numbers) \wedge (m1_subset.1 np_3 k1_numbers)) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xcmplx.0 X0) \Rightarrow (k7_xcmplx.0 np_1 X0 = k5_xcmplx.0 X0) \quad (5)$$

Assume the following.

$$((v2_xxreal.0 np_2) \wedge (m2_subset.1 np_2 k1_numbers k5_numbers)) \wedge ((m1_subset.1 np_2 k5_numbers) \wedge (m1_subset.1 np_2 k1_numbers)) \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$k3_xcmplx_0 \ (k7_xcmplx_0 \ np_1 \ np_2) \ np_3 = k7_xcmplx_0 \ np_3 \ np_2 \quad (8)$$

Assume the following.

$$k3_xcmplx_0 \ np_2 \ (k7_xcmplx_0 \ np_1 \ np_2) = np_1 \quad (9)$$

Assume the following.

$$k3_xcmplx_0 \ np_1 \ (k7_xcmplx_0 \ np_1 \ np_2) = k7_xcmplx_0 \ np_1 \ np_2 \quad (10)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ (k7_xcmplx_0 \ np_1 \ np_2) = k7_xcmplx_0 \ np_3 \ np_2 \quad (11)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ np_1 = np_2 \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k1_numbers) \wedge (v1_xreal_0 \ X1)) \Rightarrow (k8_real_1 \ X0 \ X1 = k3_xcmplx_0 \ X0 \ X1) \quad (13)$$

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.

$$k32_sin_cos = k31_sin_cos \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k1_numbers) \wedge (v1_xreal_0 \ X1)) \Rightarrow (k10_real_1 \ X0 \ X1 = k7_xcmplx_0 \ X0 \ X1) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xreal_0 \ X1)) \Rightarrow (v1_xreal_0 \ (k7_xcmplx_0 \ X0 \ X1)) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xreal_0 \ X1)) \Rightarrow (v1_xreal_0 \ (k2_xcmplx_0 \ X0 \ X1)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(v1_xcmplx_0 (k7_xcmplx_0 X0 X1)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(v1_xcmplx_0 (k2_xcmplx_0 X0 X1)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k8_real_1 X0 X1) k1_numbers) \quad (21)$$

Assume the following.

$$m1_subset_1 k32_sin_cos k1_numbers \quad (22)$$

Assume the following.

$$v1_xreal_0 k31_sin_cos \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k10_real_1 X0 X1) k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(\forall X1.(v1_xcmplx_0 X1)\Rightarrow(k7_xcmplx_0 X0 X1 = k3_xcmplx_0 X0 (k5_xcmplx_0 X1))) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(k8_real_1 X0 X1 = k8_real_1 X1 X0) \quad (26)$$

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.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xcmplx_0 X0) \quad (28)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (29)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xcmplx_0 X0) \quad (30)$$

Theorem 1

$$k7_real_1 (k8_real_1 (k10_real_1 np_3 np_2) k32_sin_cos) (k10_real_1 k32_sin_cos np_2) = k8_real_1 np_2 k32_sin_cos$$