

l43_sin_cos5

(TMP2WQBLFqVjdm1Miu38aXwvuWefDFZDNVW)

October 27, 2020

Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_sin_cos5 : \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_sin_cos2 : \iota$ be given. Let $k7_binop_2 : \iota \Rightarrow \iota$ be given. Let $k1_sin_cos2 : \iota$ be given. Let $k7_sin_cos2 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_sin_cos2 : \iota \Rightarrow \iota$ be given. Let $k5_sin_cos2 : \iota \Rightarrow \iota$ be given. Let $k3_sin_cos2 : \iota \Rightarrow \iota$ be given. Let $k2_sin_cos2 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow & ((k1_seq_1 k4_sin_cos2 (k7_binop_2 \\ X0) = k1_seq_1 k4_sin_cos2 X0) \wedge & ((k1_seq_1 k1_sin_cos2 (k7_binop_2 \\ X0) = k1_real_1 (k1_seq_1 k1_sin_cos2 X0)) \wedge & (k1_seq_1 k7_sin_cos2 \\ (k7_binop_2 X0) = k1_real_1 (k1_seq_1 k7_sin_cos2 X0)))) & \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.(v1_xcmplx_0 X1) \Rightarrow (k7_xcmplx_0 X0 (k4_xcmplx_0 X1) = k4_xcmplx_0 (k7_xcmplx_0 X0 X1))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (k7_binop_2 X0 = k4_xcmplx_0 X0) \quad (3)$$

Assume the following.

$$\forall X0.k6_sin_cos2 X0 = k5_sin_cos2 X0 \quad (4)$$

Assume the following.

$$\forall X0.k3_sin_cos2 X0 = k2_sin_cos2 X0 \quad (5)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (k1_real_1 X0 = k4_xcmplx_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(k10_real_1 X0 X1 = k7_xcmplx_0 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(k7_binop_2 (k7_binop_2 X0) = X0) \quad (8)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k1_real_1 (k1_real_1 X0) = X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(v1_xreal_0 (k7_xcmplx_0 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge(v1_xreal_0 (k4_xcmplx_0 X0))) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(m1_subset_1 (k7_binop_2 X0) k1_numbers) \quad (12)$$

Assume the following.

$$\forall X0.m1_subset_1 (k6_sin_cos2 X0) k1_numbers \quad (13)$$

Assume the following.

$$\forall X0.m1_subset_1 (k3_sin_cos2 X0) k1_numbers \quad (14)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(m1_subset_1 (k1_real_1 X0) k1_numbers) \quad (15)$$

Assume the following.

$$\forall X0.k5_sin_cos2 X0 = k1_seq_1 k4_sin_cos2 X0 \quad (16)$$

Assume the following.

$$\forall X0.k2_sin_cos2 X0 = k1_seq_1 k1_sin_cos2 X0 \quad (17)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(k1_sin_cos5 X0 = k10_real_1 (k6_sin_cos2 X0) (k3_sin_cos2 X0)) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xcmplx_0 X0) \quad (19)$$

Assume the following.

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

Theorem 1

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (k1_sin_cos5 (k4_xcmplx_0 X0) = k1_real_1 (k1_sin_cos5 X0))$$