

t16_sin_cos3

(TMa6KLadbhzxk1sunfubRp32LLWoQE9MGHE)

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Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k10_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_numbers : \iota$ be given. Let $k2_sin_cos3 : \iota$ be given. Let $k5_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_complex1 : \iota$ be given. Let $k4_sin_cos3 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_xcmplx_0 : \iota$ be given. Let $k1_binop_2 : \iota \Rightarrow \iota$ be given. Let $k15_sin_cos : \iota \Rightarrow \iota$ be given. Let $k14_sin_cos : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 \\ X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 (k3_xcmplx_0 X0 X1) X2 = k3_xcmplx_0 \\ X0 (k3_xcmplx_0 X1 X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 X0 (k4_xcmplx_0 np_1) = k4_xcmplx_0 X0) \quad (3)$$

Assume the following.

$$k3_xcmplx_0 k1_xcmplx_0 k1_xcmplx_0 = k4_xcmplx_0 np_1 \quad (4)$$

Assume the following.

$$k7_complex1 = k1_xcmplx_0 \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k5_binop_2 X0 X1 = k3_xcmplx_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k1_binop_2 X0 = k4_xcmplx_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k15_sin_cos X0 = k14_sin_cos X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge \\ & m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (k10_funct_2 \\ & X0 X1 X2 X3 = k7_partfun1 X1 X2 X3) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k1_binop_2 (k1_binop_2 X0) = X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 \\ & X3 X0))) \Rightarrow (k7_partfun1 X1 X2 X3 = k3_funct_2 X0 X1 X2 X3) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (v1_xcmplx_0 (k3_xcmplx_0 X0 X1)) \quad (12)$$

Assume the following.

$$\neg v1_xboole_0 k2_numbers \quad (13)$$

Assume the following.

$$v1_xcmplx_0 k1_xcmplx_0 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (m1_subset_1 (k5_binop_2 X0 X1) k2_numbers) \quad (15)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (v1_xcmplx_0 (k4_xcmplx_0 X0)) \quad (16)$$

Assume the following.

$$(v1_funct_1 k4_sin_cos3) \wedge ((v1_funct_2 k4_sin_cos3 k2_numbers k2_numbers) \wedge (m1_subset_1 k4_sin_cos3 (k1_zfmisc_1 (k2_zfmisc_1 k2_numbers k2_numbers)))) \quad (17)$$

Assume the following.

$$(v1_funct_1\ k2_sin_cos3) \wedge ((v1_funct_2\ k2_sin_cos3\ k2_numbers\ k2_numbers) \wedge (m1_subset_1\ k2_sin_cos3\ (k1_zfmisc_1\ (k2_zfmisc_1\ k2_numbers\ k2_numbers)))) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (v1_xcmplx_0\ (k14_sin_cos\ X0)) \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0) \wedge ((v1_funct_2\ X0\ k2_numbers\ k2_numbers) \wedge \\ & (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k2_numbers\ k2_numbers)))) \Rightarrow \\ & ((X0 = k4_sin_cos3) \Leftrightarrow (\forall X1.(m1_subset_1\ X1\ k2_numbers) \Rightarrow \\ & (k3_funct_2\ k2_numbers\ k2_numbers\ X0\ X1 = k6_binop_2\ (k3_binop_2 \\ & (k15_sin_cos\ X1)\ (k15_sin_cos\ (k1_binop_2\ X1))))\ np_2))) \quad (20) \end{aligned}$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Leftrightarrow (X0 \in k2_numbers) \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0) \wedge ((v1_funct_2\ X0\ k2_numbers\ k2_numbers) \wedge \\ & (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k2_numbers\ k2_numbers)))) \Rightarrow \\ & ((X0 = k2_sin_cos3) \Leftrightarrow (\forall X1.(m1_subset_1\ X1\ k2_numbers) \Rightarrow \\ & (k3_funct_2\ k2_numbers\ k2_numbers\ X0\ X1 = k6_binop_2\ (k3_binop_2 \\ & (k15_sin_cos\ (k5_binop_2\ k7_complex1\ X1))\ (k15_sin_cos\ (k1_binop_2 \\ & (k5_binop_2\ k7_complex1\ X1))))\ np_2))) \quad (22) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0\ X0) \wedge (v1_xcmplx_0\ X1)) \Rightarrow (k3_xcmplx_0\ X0\ X1 = k3_xcmplx_0\ X1\ X0) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0\ X0) \wedge (v1_xcmplx_0\ X1)) \Rightarrow (k3_binop_2\ X0\ X1 = k3_binop_2\ X1\ X0) \quad (24)$$

Theorem 1

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (k10_funct_2\ k2_numbers\ k2_numbers\ k2_sin_cos3\ (k5_binop_2\ k7_complex1\ X0) = k10_funct_2\ k2_numbers\ k2_numbers\ k4_sin_cos3\ X0)$$