

l50_sin_cos7

(TMSaTpXfQu23X1UeE8P2YocZoYZaf2dhz5u)

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Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k9_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_square_1 : \iota \Rightarrow \iota$ be given. Let $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_square_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k6_square_1 : \iota \Rightarrow \iota$ 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 $np_0 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (v3_xxreal_0 X1)) \Rightarrow (v3_xxreal_0 X0))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xxreal_0 k6_numbers X0) \wedge (r1_xxreal_0 X0 X1)) \Rightarrow (r1_xxreal_0 (k6_square_1 X0) (k6_square_1 X1)))) \quad (3)$$

Assume the following.

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

Assume the following.

$$k7_square_1 k6_numbers = k6_numbers \quad (5)$$

Assume the following.

$$((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \quad (6)$$

Assume the following.

$$(m2_subset_1 \ np_0 \ k1_numbers \ k5_numbers) \wedge ((m1_subset_1 \ np_0 \ k5_numbers) \wedge (m1_subset_1 \ np_0 \ k1_numbers)) \quad (7)$$

Assume the following.

$$v1_xboole_0 \ np_0 \quad (8)$$

Assume the following.

$$k4_xcmplx_0 \ np_0 = np_0 \quad (9)$$

Assume the following.

$$r1_xxreal_0 \ np_0 \ np_0 \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0 \ X0) \wedge (v1_xreal_0 \ X1)) \Rightarrow (k9_binop_2 \ X0 \ X1 = k2_xcmplx_0 \ X0 \ X1) \quad (11)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (k7_square_1 \ X0 = k6_square_1 \ X0) \quad (12)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0. (v1_xreal_0 \ X0) \Rightarrow ((r1_xxreal_0 \ X0 \ np_1) \Rightarrow ((r1_xxreal_0 \ X0 \ k6_numbers) \vee (r1_xxreal_0 \ k6_numbers \ (k10_binop_2 \ np_1 \ (k3_square_1 \ X0)))))) \quad (14)$$

Assume the following.

$$\forall X0. (v1_xreal_0 \ X0) \Rightarrow (v1_xreal_0 \ (k3_square_1 \ X0)) \quad (15)$$

Assume the following.

$$\forall X0. ((\neg v3_xxreal_0 \ X0) \wedge (v1_xreal_0 \ X0)) \Rightarrow ((v1_xcmplx_0 \ (k4_xcmplx_0 \ X0)) \wedge (\neg v2_xxreal_0 \ (k4_xcmplx_0 \ X0))) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. (((v2_xxreal_0 \ X0) \wedge (v1_xreal_0 \ X0)) \wedge (\neg v3_xxreal_0 \ X1) \wedge (v1_xreal_0 \ X1)) \Rightarrow (v2_xxreal_0 \ (k2_xcmplx_0 \ X0 \ X1)) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k9_binop_2 X0 X1) k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xreal_0 (k6_square_1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k10_binop_2 X0 X1) k1_numbers) \quad (20)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge(v3_xxreal_0 X0))\Rightarrow((\neg v1_xboole_0 X0)\wedge((v1_xxreal_0 X0)\wedge(\neg v2_xxreal_0 X0))) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (23)$$

Theorem 1

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(\neg(\neg r1_xxreal_0 X0 k6_numbers)\wedge(r1_xxreal_0 X0 np_1)\wedge(r1_xxreal_0 (k9_binop_2 np_1 (k7_square_1 (k10_binop_2 np_1 (k3_square_1 X0)))) k6_numbers))$$