

# l39\_sin\_cos7

(TMY8fcacSD6V2P Ji19Sps9pmkrbtDqhgAV5)

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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  $np\_1 : \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $k12\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_sin\_cos2 : \iota$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $np\_2 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v5\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 X1) \wedge ((\neg v3\_xxreal\_0 X1) \wedge (\neg v2\_xxreal\_0 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Leftrightarrow (r1\_xxreal\_0 (k2\_xcmplx\_0 X0 X2) (k2\_xcmplx\_0 X1 X2)))))) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 (k4\_xcmplx\_0 X1) X0) \wedge (r1\_xxreal\_0 k6\_numbers (k2\_xcmplx\_0 X0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 (k4\_xcmplx\_0 X0) X1) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k2\_xcmplx\_0 X0 X1)))) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((\neg(\neg r1\_xxreal\_0 k6\_numbers X0) \wedge (r1\_xxreal\_0 (k4\_xcmplx\_0 X0) k6\_numbers)) \wedge (\neg(\neg r1\_xxreal\_0 (k4\_xcmplx\_0 X0) k6\_numbers) \wedge (r1\_xxreal\_0 k6\_numbers X0))) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X1 X0) \wedge (r1\_xxreal\_0 (k6\_xcmplx\_0 X1 X0) k6\_numbers))) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(r1\_xxreal\_0 X0 X1) \wedge ((\neg v2\_xxreal\_0 X1) \wedge (v2\_xxreal\_0 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(r1\_xxreal\_0 X0 X1) \wedge ((\neg v3\_xxreal\_0 X0) \wedge (v3\_xxreal\_0 X1)))) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 k6\_numbers X0) \wedge (r1\_xxreal\_0 X1 (k2\_xcmplx\_0 X0 X1)))) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((k1\_seq\_1 k4\_sin\_cos2 X0 \neq k6\_numbers) \wedge ((\neg r1\_xxreal\_0 (k1\_seq\_1 k4\_sin\_cos2 X0) k6\_numbers) \wedge (k1\_seq\_1 k4\_sin\_cos2 k6\_numbers = np\_1))) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 k6\_numbers X0) \wedge ((\neg r1\_xxreal\_0 k6\_numbers X1) \wedge (r1\_xxreal\_0 (k7\_xcmplx\_0 X0 X1) k6\_numbers)))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 k6\_numbers) \wedge ((\neg r1\_xxreal\_0 X1 k6\_numbers) \wedge (r1\_xxreal\_0 (k7\_xcmplx\_0 X0 X1) k6\_numbers)))) \quad (13)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (14)$$

Assume the following.

$$(m2\_subset\_1 \ np\_0 \ k1\_numbers \ k5\_numbers) \wedge ((m1\_subset\_1 \ np\_0 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_0 \ k1\_numbers)) \quad (15)$$

Assume the following.

$$v1\_xboole\_0 \ np\_0 \quad (16)$$

Assume the following.

$$k4\_xcmplx\_0 \ (k4\_xcmplx\_0 \ np\_1) = np\_1 \quad (17)$$

Assume the following.

$$k4\_xcmplx\_0 \ np\_0 = np\_0 \quad (18)$$

Assume the following.

$$k6\_xcmplx\_0 \ np\_0 \ np\_1 = k4\_xcmplx\_0 \ np\_1 \quad (19)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_1 \ (k4\_xcmplx\_0 \ np\_1) = np\_0 \quad (20)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_1 \ np\_1 = np\_2 \quad (21)$$

Assume the following.

$$r1\_xreal\_0 \ np\_1 \ np\_2 \quad (22)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (k9\_binop\_2 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (23)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (24)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (25)$$

Assume the following.

$$\forall X0. (v1\_int\_1 \ X0) \Rightarrow (k19\_binop\_2 \ X0 = k4\_xcmplx\_0 \ X0) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(k12\_binop\_2 X0 X1 = k7\_xcmplx\_0 X0 X1) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(k10\_binop\_2 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (28)$$

Assume the following.

$$\exists X0.(v1\_xboole\_0 X0)\wedge((v1\_xcmplx\_0 X0)\wedge((v1\_xxreal\_0 X0)\wedge(v1\_xreal\_0 X0))) \quad (29)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(\forall X1.(v1\_xreal\_0 X1)\Rightarrow(\neg(\neg r1\_xxreal\_0 X1 X0)\wedge(r1\_xxreal\_0 k6\_numbers (k6\_xcmplx\_0 X0 X1)))) \quad (30)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(\forall X1.(v1\_xreal\_0 X1)\Rightarrow(\neg(r1\_xxreal\_0 X0 k6\_numbers)\wedge(\neg r1\_xxreal\_0 k6\_numbers X1)\wedge(r1\_xxreal\_0 k6\_numbers (k2\_xcmplx\_0 X0 X1)))) \quad (31)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (32)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k2\_xcmplx\_0 X0 X1)) \quad (33)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge(v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (34)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (35)$$

Assume the following.

$$\forall X0.((\neg v3\_xxreal\_0 X0)\wedge(v1\_xreal\_0 X0))\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge(\neg v2\_xxreal\_0 (k4\_xcmplx\_0 X0))) \quad (36)$$

Assume the following.

$$\forall X0.\forall X1.(((v2\_xxreal\_0 X0)\wedge(v1\_xreal\_0 X0))\wedge(\neg v3\_xxreal\_0 X1)\wedge(v1\_xreal\_0 X1))\Rightarrow(v2\_xxreal\_0 (k2\_xcmplx\_0 X1 X0)) \quad (37)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(m1\_subset\_1 (k9\_binop\_2 X0 X1) k1\_numbers) \quad (38)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(m1\_subset\_1 (k10\_binop\_2 X0 X1) k1\_numbers) \quad (39)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow( (r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \quad (40)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0)\wedge(v3\_xxreal\_0 X0))\Rightarrow((\neg v1\_xboole\_0 X0)\wedge((v1\_xxreal\_0 X0)\wedge(\neg v2\_xxreal\_0 X0))) \quad (41)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (42)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (43)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (44)$$

Assume the following.

$$\forall X0.(v6\_membered X0)\Rightarrow(v5\_membered X0) \quad (45)$$

Assume the following.

$$\forall X0.(v6\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow (v7\_ordinal1 X1)) \quad (46)$$

Assume the following.

$$\forall X0.(v5\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow (v1\_int\_1 X1)) \quad (47)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow (v1\_xreal\_0 X1)) \quad (48)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(\neg(\neg(r1\_xxreal\_0 X0 np\_1)\wedge(r1\_xxreal\_0 (k19\_binop\_2 np\_1) X0))\wedge(r1\_xxreal\_0 (k12\_binop\_2 (k9\_binop\_2 X0 np\_1) (k10\_binop\_2 X0 np\_1)) k6\_numbers))$$