

t4\_sin\_cos7 (TMH-  
wXDyuTn6Kw5FX8HsQk51eXMY2Tgk92Zj)

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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  $k7\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k6\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  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  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v4\_membered : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v5\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k3\_xcmplx\_0 X0 X0)) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee ((v3\_xxreal\_0 X0) \vee (v2\_xxreal\_0 X1)))))) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\neg(\neg r1\_xxreal\_0 X0 k6\_numbers) \wedge (r1\_xxreal\_0 (k6\_square\_1 X0) k6\_numbers)) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (v2\_xxreal\_0 X0)) \Rightarrow (v2\_xxreal\_0 X1))) \quad (5)$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (k9\_binop\_2 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (8)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k7\_square\_1 \ X0 = k6\_square\_1 \ X0) \quad (9)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (10)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (11)$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \quad (12)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 \ X0) \Rightarrow (v1\_xreal\_0 \ (k3\_square\_1 \ X0)) \quad (13)$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v2\_xxreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X0)) \wedge \\ & (\neg v3\_xxreal\_0 \ X1) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (v2\_xxreal\_0 \ (k2\_xcmplx\_0 \ X1 \ X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (m1\_subset\_1 \ (k9\_binop\_2 \ X0 \ X1) \ k1\_numbers) \quad (16)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 \ X0) \Rightarrow (k3\_square\_1 \ X0 = k3\_xcmplx\_0 \ X0 \ X0) \quad (17)$$

Assume the following.

$$\forall X0. ((v1\_xxreal\_0 \ X0) \wedge (v3\_xxreal\_0 \ X0)) \Rightarrow ((\neg v1\_xboole\_0 \ X0) \wedge ((v1\_xreal\_0 \ X0) \wedge (\neg v2\_xxreal\_0 \ X0))) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (19)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(v4\_membered X0) \Rightarrow (v3\_membered X0) \quad (22)$$

Assume the following.

$$\forall X0.(v5\_membered X0) \Rightarrow (v4\_membered X0) \quad (23)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (24)$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (v5\_membered X0) \quad (25)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v1\_xreal\_0 X1)) \quad (26)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\neg r1\_xxreal\_0 (k7\_square\_1 (k9\_binop\_2 (k3\_square\_1 X0) np\_1)) k6\_numbers)$$