

l95\_sin\_cos (TMHx-  
UQg3FJ2MpFZvVBQpL3h24hCAYWRo5Me)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k3\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_complex1 : \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k15\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $k1\_xcmplx\_0 : \iota$  be given. Let  $k2\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k1\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k5\_arytm\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_funct.4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$(k3\_complex1 \ k7\_complex1 = k6\_numbers) \wedge (k4\_complex1 \ k7\_complex1 = np\_1) \quad (1)$$

Assume the following.

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

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 \ X0) \Rightarrow ((k3\_complex1 \ (k15\_complex1 \ X0) = k3\_complex1 \ X0) \wedge (k4\_complex1 \ (k15\_complex1 \ X0) = k1\_real\_1 \ (k4\_complex1 \ X0))) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 \ X0) \Rightarrow (k2\_xcmplx\_0 \ X0 \ k6\_numbers = X0) \quad (4)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \ X1 \ k2\_numbers) \Rightarrow ((k8\_real\_1 \ X0 \ (k3\_complex1 \ X1) = k3\_complex1 \ (k3\_xcmplx\_0 \ X0 \ X1)) \wedge (k8\_real\_1 \ X0 \ (k4\_complex1 \ X1) = k4\_complex1 \ (k3\_xcmplx\_0 \ X0 \ X1)))) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (( \\ (k3\_complex1 X0 = k6\_numbers) \wedge (k3\_complex1 X1 = k6\_numbers)) \Rightarrow \\ ((k3\_complex1 (k3\_xcmplx\_0 X0 X1) = k1\_real\_1 (k8\_real\_1 (k4\_complex1 \\ X0) (k4\_complex1 X1))) \wedge (k4\_complex1 (k3\_xcmplx\_0 X0 X1) = k6\_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((k3\_complex1 \\ (k2\_xcmplx\_0 X0 (k3\_xcmplx\_0 X1 k7\_complex1)) = X0) \wedge (k4\_complex1 \\ (k2\_xcmplx\_0 X0 (k3\_xcmplx\_0 X1 k7\_complex1)) = X1))) \end{aligned} \quad (7)$$

Assume the following.

$$k2\_xcmplx\_0 np\_1 (k4\_xcmplx\_0 np\_1) = np\_0 \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 \\ X1)) \Rightarrow (k8\_real\_1 X0 X1 = k3\_xcmplx\_0 X0 X1) \end{aligned} \quad (9)$$

Assume the following.

$$k7\_complex1 = k1\_xcmplx\_0 \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k4\_complex1 X0 = k2\_complex1 X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_complex1 X0 = k1\_complex1 X0) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k5\_arytm\_0 (k3\_complex1 X0) (k4\_complex1 \\ X0) = X0) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_numbers) \Rightarrow (k5\_arytm\_0 X0 X1 = k2\_xcmplx\_0 X0 (k3\_xcmplx\_0 \\ X1 k7\_complex1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k4\_complex1 (k3\_xcmplx\_0 \\ X0 k7\_complex1) = X0) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k3\_complex1 (k3\_xcmplx\_0 X0 k7\_complex1) = k6\_numbers) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (( \\ k3\_complex1 (k3\_xcmplx\_0 X0 X1) = k9\_real\_1 (k8\_real\_1 (k3\_complex1 \\ X0) (k3\_complex1 X1)) (k8\_real\_1 (k4\_complex1 X0) (k4\_complex1 \\ X1))) \wedge (k4\_complex1 (k3\_xcmplx\_0 X0 X1) = k7\_real\_1 (k8\_real\_1 \\ (k3\_complex1 X0) (k4\_complex1 X1)) (k8\_real\_1 (k3\_complex1 X1) \\ (k4\_complex1 X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (k3\_xcmplx\_0 \\ X0 X1 = k5\_arytm\_0 (k9\_real\_1 (k8\_real\_1 (k3\_complex1 X0) (k3\_complex1 \\ X1)) (k8\_real\_1 (k4\_complex1 X0) (k4\_complex1 X1))) (k7\_real\_1 \\ (k8\_real\_1 (k3\_complex1 X0) (k4\_complex1 X1)) (k8\_real\_1 (k3\_complex1 \\ X1) (k4\_complex1 X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$k2\_xcmplx\_0 np\_1 (k4\_xcmplx\_0 np\_1) = k6\_numbers \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (v1\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1)) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (v1\_xreal\_0 (k2\_complex1 X0)) \quad (21)$$

Assume the following.

$$v1\_xcmplx\_0 k1\_xcmplx\_0 \quad (22)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (v1\_xreal\_0 (k1\_complex1 X0)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 k1\_numbers)) \Rightarrow (m1\_subset\_1 (k5\_arytm\_0 X0 X1) k2\_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_complex1 X0) k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k3\_complex1 X0) k1\_numbers) \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_numbers) \Rightarrow (((X1 = k6\_numbers) \Rightarrow (k5\_arytm\_0 X0 X1 = X0)) \wedge (( \\ X1 \neq k6\_numbers) \Rightarrow (k5\_arytm\_0 X0 X1 = k5\_funct\_4 k1\_numbers k6\_numbers \\ np\_1 X0 X1)))) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k8\_real\_1 X0 X1 = k8\_real\_1 X1 X0) \quad (28)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k3\_xcmplx\_0 X0 X1 = k3\_xcmplx\_0 X1 X0) \quad (29)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (30)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (32)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(v1\_xcmplx\_0 \\ X1) \Rightarrow ((k3\_complex1 (k3\_xcmplx\_0 (k3\_xcmplx\_0 X0 k7\_complex1) \\ X1) = k1\_real\_1 (k8\_real\_1 X0 (k4\_complex1 X1))) \wedge ((k4\_complex1 \\ (k3\_xcmplx\_0 (k3\_xcmplx\_0 X0 k7\_complex1) X1) = k8\_real\_1 X0 (k3\_complex1 \\ X1)) \wedge ((k3\_complex1 (k3\_xcmplx\_0 X0 X1) = k8\_real\_1 X0 (k3\_complex1 \\ X1)) \wedge (k4\_complex1 (k3\_xcmplx\_0 X0 X1) = k8\_real\_1 X0 (k4\_complex1 \\ X1)))))) \end{aligned}$$