

t61\_comp trig  
(TMLE1dViLoz9gPF5EPdxYhD2QdYvt4VSfQr)

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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  $k20\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k32\_sin\_cos : \iota$  be given. Let  $k21\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k17\_sin\_cos : \iota \Rightarrow \iota$  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  $k31\_sin\_cos : \iota$  be given. Assume the following.

$$\begin{aligned}
 & (k21\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = k6\_numbers) \wedge (( \\
 & k18\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = np\_1) \wedge ((k21\_sin\_cos \\
 & k32\_sin\_cos = k1\_real\_1 np\_1) \wedge ((k18\_sin\_cos k32\_sin\_cos = k6\_numbers) \wedge \\
 & ((k21\_sin\_cos (k7\_real\_1 k32\_sin\_cos (k10\_real\_1 k32\_sin\_cos \\
 & np\_2)) = k6\_numbers) \wedge ((k18\_sin\_cos (k7\_real\_1 k32\_sin\_cos ( \\
 & k10\_real\_1 k32\_sin\_cos np\_2)) = k1\_real\_1 np\_1) \wedge ((k21\_sin\_cos \\
 & (k8\_real\_1 np\_2 k32\_sin\_cos) = np\_1) \wedge (k18\_sin\_cos (k8\_real\_1 \\
 & np\_2 k32\_sin\_cos) = k6\_numbers))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 np\_1 X0 = X0) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow & ((k2\_xcmplx\_0 (k3\_square\_1 (k20\_sin\_cos \\ X0)) (k3\_square\_1 (k17\_sin\_cos X0)) = np\_1) \wedge & (k2\_xcmplx\_0 (k3\_xcmplx\_0 \\ (k20\_sin\_cos X0) (k20\_sin\_cos X0)) (k3\_xcmplx\_0 (k17\_sin\_cos \\ X0) (k17\_sin\_cos X0)) = np\_1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k2\_xcmplx\_0 X0 \text{ k6\_numbers} = X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow & (\neg(r1\_xxreal\_0 \text{ k6\_numbers} X0) \wedge (( \\ \neg r1\_xxreal\_0 (k8\_real\_1 np\_2 \text{ k32\_sin\_cos} X0) \wedge & ((k17\_sin\_cos \\ X0 = \text{ k6\_numbers}) \wedge ((X0 \neq \text{ k6\_numbers}) \wedge (X0 \neq \text{ k32\_sin\_cos})))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0 X0) \wedge ((v1\_xcmplx\_0 \\ X1) \wedge (v1\_xcmplx\_0 X2))) \Rightarrow & (k2\_xcmplx\_0 (k2\_xcmplx\_0 X0 X1) X2 = k2\_xcmplx\_0 \\ X0 (k2\_xcmplx\_0 X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 \text{ k1\_numbers} \text{ k5\_numbers})) \wedge \\ ((m1\_subset\_1 np\_1 \text{ k5\_numbers}) \wedge (m1\_subset\_1 np\_1 \text{ k1\_numbers})) \end{aligned} \quad (8)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (9)$$

Assume the following.

$$k3\_xcmplx\_0 np\_1 np\_1 = np\_1 \quad (10)$$

Assume the following.

$$k2\_xcmplx\_0 (k4\_xcmplx\_0 np\_1) np\_1 = np\_0 \quad (11)$$

Assume the following.

$$r1\_xxreal\_0 (k4\_xcmplx\_0 np\_1) np\_0 \quad (12)$$

Assume the following.

$$\neg r1\_xxreal\_0 np\_1 np\_0 \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1\_subset\_1 X0 \text{ k1\_numbers}) \wedge (v1\_xreal\_0 \\ X1)) \Rightarrow (k8\_real\_1 X0 X1 = k3\_xcmplx\_0 X0 X1) \end{aligned} \quad (14)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (15)$$

Assume the following.

$$k32\_sin\_cos = k31\_sin\_cos \quad (16)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k21\_sin\_cos X0 = k20\_sin\_cos X0) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k1\_real\_1 X0 = k4\_xcmplx\_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k18\_sin\_cos X0 = k17\_sin\_cos X0) \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1\_xboole\_0 X0) \wedge (v1\_xcmplx\_0 X0)) \wedge \\ & ((\neg v1\_xboole\_0 X1) \wedge (v1\_xcmplx\_0 X1))) \Rightarrow (\neg v1\_xboole\_0 (k3\_xcmplx\_0 \\ & X0 X1)) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (v1\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 X1)) \Rightarrow (m1\_subset\_1 (k8\_real\_1 X0 X1) k1\_numbers) \quad (22)$$

Assume the following.

$$m1\_subset\_1 k32\_sin\_cos k1\_numbers \quad (23)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (m1\_subset\_1 (k21\_sin\_cos X0) k1\_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (m1\_subset\_1 (k18\_sin\_cos X0) k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_square\_1 X0 = k3\_xcmplx\_0 X0 X0) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X1 X0) \quad (27)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (28)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (29)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (((r1\_xreal\_0 k6\_numbers X0) \wedge (k20\_sin\_cos X0 = np\_1)) \Rightarrow ((r1\_xreal\_0 (k8\_real\_1 np\_2 k32\_sin\_cos) X0) \vee (X0 = k6\_numbers)))$$