

# t48\_comptrig (TMHtpApAdoWriogq- LYk4ND4xqyEYGgDKgJ8)

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Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k18\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k1\_comptrig : \iota \Rightarrow \iota$  be given. Let  $k21\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k32\_sin\_cos : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k20\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k17\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k5\_arytm\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k5\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow ((r1\_xxreal\_0 k6\_numbers (k4\_complex1 X0)) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k18\_sin\_cos (k1\_comptrig X0)))) \tag{3}$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (\neg(\neg(r1\_xxreal\_0 k6\_numbers (k4\_complex1 X0)) \wedge (r1\_xxreal\_0 k6\_numbers (k18\_sin\_cos (k1\_comptrig X0)))) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow ((\neg r1\_xreal\_0 k6\_numbers X0) \Rightarrow (k1\_comp trig X0 = k32\_sin\_cos)) \quad (5)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow ((r1\_xreal\_0 k6\_numbers X0) \Rightarrow (k1\_comp trig X0 = k6\_numbers)) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((k21\_sin\_cos k6\_numbers = np\_1) \wedge ((k18\_sin\_cos k6\_numbers = k6\_numbers) \wedge ((k20\_sin\_cos (k4\_xcmplx\_0 X0) = k20\_sin\_cos X0) \wedge (k17\_sin\_cos (k4\_xcmplx\_0 X0) = k4\_xcmplx\_0 (k17\_sin\_cos X0)))))) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (((r1\_xreal\_0 X0 X1) \wedge (v3\_xreal\_0 X1)) \Rightarrow (v3\_xreal\_0 X0))) \quad (8)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k5\_arytm\_0 (k3\_complex1 X0) (k4\_complex1 X0) = X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_complex1 X0) k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k3\_complex1 X0) k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (m1\_subset\_1 (k1\_comp trig X0) k1\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (m1\_subset\_1 (k18\_sin\_cos X0) k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((v3\_xreal\_0 X0) \Leftrightarrow (\neg r1\_xreal\_0 k6\_numbers X0)) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow ((v2\_xxreal\_0 X0) \Leftrightarrow (\neg r1\_xxreal\_0 X0 \wedge k6\_numbers)) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_numbers) \Rightarrow (((X1 = k6\_numbers) \Rightarrow (k5\_arytm\_0 X0 X1 = X0)) \wedge (( \\ X1 \neq k6\_numbers) \Rightarrow (k5\_arytm\_0 X0 X1 = k5\_funct\_4 k1\_numbers k6\_numbers \\ np\_1 X0 X1)))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ( \\ (r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0)) \quad (18)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge ((\neg v2\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 \\ X0))) \Rightarrow ((v1\_xboole\_0 X0) \wedge (v1\_xxreal\_0 X0)) \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (20)$$

Assume the following.

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

Assume the following.

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

**Theorem 1**

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow ((r1\_xxreal\_0 (k4\_complex1 X0) k6\_numbers) \Rightarrow \\ (r1\_xxreal\_0 (k18\_sin\_cos (k1\_comptrig X0)) k6\_numbers))$$