

## t37\_sin\_cos

(TMKoEEqg6NYfCj4jUW1E9UXd1sau5whYta9)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_sin\_cos : \iota$  be given. Let  $k4\_series\_1 : \iota \Rightarrow \iota$  be given. Let  $k23\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k16\_sin\_cos : \iota$  be given. Let  $k22\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v2\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $k3\_series\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k11\_comseq\_3 : \iota \Rightarrow \iota$  be given. Let  $k3\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_complex1 : \iota$  be given. Let  $k3\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow & ((v2\_comseq\_2 (k3\_series\_1 \\ & (k22\_sin\_cos X0))) \wedge ((k4\_series\_1 (k22\_sin\_cos X0) = k4\_complex1 \\ & (k11\_comseq\_3 (k3\_sin\_cos (k3\_xcmplx\_0 X0 k7\_complex1)))) \wedge \\ & (v2\_comseq\_2 (k3\_series\_1 (k23\_sin\_cos X0))) \wedge (k4\_series\_1 ( \\ & k23\_sin\_cos X0) = k3\_complex1 (k11\_comseq\_3 (k3\_sin\_cos (k3\_xcmplx\_0 \\ & X0 k7\_complex1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \tag{2}$$

Assume the following.

$$\begin{aligned} (v1\_funct\_1 k19\_sin\_cos) \wedge ((v1\_funct\_2 k19\_sin\_cos k1\_numbers \\ k1\_numbers) \wedge (m1\_subset\_1 k19\_sin\_cos (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} (v1\_funct\_1 k16\_sin\_cos) \wedge ((v1\_funct\_2 k16\_sin\_cos k1\_numbers \\ k1\_numbers) \wedge (m1\_subset\_1 k16\_sin\_cos (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Leftrightarrow (X0 \in k1\_numbers) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k1\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\ & ((X0 = k19\_sin\_cos) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\ & (k1\_seq\_1 X0 X1 = k3\_complex1 (k11\_comseq\_3 (k3\_sin\_cos (k3\_xcmplx\_0 \\ & X1 k7\_complex1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k1\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\ & ((X0 = k16\_sin\_cos) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\ & (k1\_seq\_1 X0 X1 = k4\_complex1 (k11\_comseq\_3 (k3\_sin\_cos (k3\_xcmplx\_0 \\ & X1 k7\_complex1)))))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((k1\_seq\_1 k19\_sin\_cos X0 = k4\_series\_1 (k23\_sin\_cos X0)) \wedge (k1\_seq\_1 k16\_sin\_cos X0 = k4\_series\_1 (k22\_sin\_cos X0)))$$