

t43\_sin\_cos2 (TMSYbr-  
mDh1r3HnowpEd23m2N8Ho215hiWxh)

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Let  $v1\_fcont\_1 : \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k7\_sin\_cos2 : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k5\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_sin\_cos2 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow ((r2\_fdiff\_1 k7\_sin\_cos2 k1\_numbers) \wedge \\ (k1\_fdiff\_1 k7\_sin\_cos2 X0 = k10\_real\_1 np\_1 (k5\_square\_1 (k1\_seq\_1 \\ k4\_sin\_cos2 X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow ((r2\_fdiff\_1 X1 X0) \Rightarrow \\ (v1\_fcont\_1 (k2\_partfun1 k1\_numbers k1\_numbers X1 X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \exists X0.(m1\_subset\_1 X0 k1\_numbers) \wedge ((v1\_xcmplx\_0 X0) \wedge (( \\ v1\_xxreal\_0 X0) \wedge ((v2\_xxreal\_0 X0) \wedge (v1\_xreal\_0 X0)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} (v1\_funct\_1 k7\_sin\_cos2) \wedge ((v1\_funct\_2 k7\_sin\_cos2 k1\_numbers \\ k1\_numbers) \wedge (m1\_subset\_1 k7\_sin\_cos2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \end{aligned} \tag{4}$$

**Theorem 1**  $v1\_fcont\_1 (k2\_partfun1 k1\_numbers k1\_numbers k7\_sin\_cos2 k1\_numbers)$ .