

t56_sincos10
(TMLt6dqVLSwVr8i3ceSxDU3b8QJiwRAKvJ1)

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Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k4_sincos10 : \iota$ be given. Let $k1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k7_square_1 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k2_fdiff_9 : \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $np_4 : \iota$ be given. Let $k1_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & k2_partfun1\ k1_numbers\ k1_numbers\ k4_sincos10\ (k1_rcomp_1\ np_1 \\
 & (k7_square_1\ np_2)) = k2_partfun2\ k1_numbers\ k1_numbers\ (k2_partfun1 \\
 & k1_numbers\ k1_numbers\ k2_fdiff_9\ (k1_rcomp_1\ (k10_real_1\ k32_sin_cos \\
 & np_4)\ (k10_real_1\ k32_sin_cos\ np_2)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & k2_relset_1\ k1_numbers\ (k2_partfun1\ k1_numbers\ k1_numbers\ k2_fdiff_9 \\
 & (k1_rcomp_1\ (k10_real_1\ k32_sin_cos\ np_4)\ (k10_real_1\ k32_sin_cos \\
 & np_2))) = k1_rcomp_1\ np_1\ (k7_square_1\ np_2)
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((v1_relat_1\ X0) \wedge (v1_funct_1\ X0)) \Rightarrow ((v2_funct_1\ X0) \Rightarrow \\
 & ((k3_relat_1\ X0\ (k2_funct_1\ X0) = k4_relat_1\ (k9_xtuple_0\ X0)) \wedge \\
 & (k3_relat_1\ (k2_funct_1\ X0)\ X0 = k4_relat_1\ (k10_xtuple_0\ X0)))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((v1_relat_1\ X1) \wedge (v5_relat_1\ X1\ X0)) \Rightarrow (\\
 & k2_relset_1\ X0\ X1 = k10_xtuple_0\ X1)
 \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v2_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k2_partfun2 X0 X1 X2 = k2_funct_1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0)))\Rightarrow(k1_partfun2 X0 X1 = k4_relat_1 X1) \quad (7)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (8)$$

Assume the following.

$$(v1_relat_1 (k5_relat_1 k2_fdiff_9 (k1_rcomp_1 (k10_real_1 k32_sin_cos np_4) (k10_real_1 k32_sin_cos np_2))))\wedge(v2_funct_1 (k5_relat_1 k2_fdiff_9 (k1_rcomp_1 (k10_real_1 k32_sin_cos np_4) (k10_real_1 k32_sin_cos np_2)))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v5_relat_1 X1 X0))\Rightarrow(m1_subset_1 (k2_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 (k2_partfun1 X0 X1 X2 X3))\wedge(m1_subset_1 (k2_partfun1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \quad (11)$$

Assume the following.

$$(v1_funct_1 k2_fdiff_9)\wedge(m1_subset_1 k2_fdiff_9 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (13)$$

Theorem 1

$$\begin{aligned} & k3_relat_1 (k2_partfun1\ k1_numbers\ k1_numbers\ k4_sincos10\ (k1_rcomp_1 \\ & \quad np_1\ (k7_square_1\ np_2)))\ (k2_partfun1\ k1_numbers\ k1_numbers \\ & \quad k2_fdiff_9\ (k1_rcomp_1\ (k10_real_1\ k32_sin_cos\ np_4)\ (k10_real_1 \\ & \quad k32_sin_cos\ np_2))) = k1_partfun2\ k1_numbers\ (k1_rcomp_1\ np_1 \\ & \quad (k7_square_1\ np_2)) \end{aligned}$$