

t45_sin_cos9
(TMXsG84hrfDbtDf2EhcSaMUY2SR1fo1ED9o)

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Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k1_sin_cos9 : \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k29_sin_cos : \iota$ be given. Let $k2_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ 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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ 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 $k2_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v2_funct_1 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \Rightarrow ((v5_valued_0 \\ & (k2_partfun1 k1_numbers k1_numbers X1 X0)) \Rightarrow (v5_valued_0 (k2_partfun1 \\ & k1_numbers k1_numbers (k2_partfun2 k1_numbers k1_numbers (k2_partfun1 \\ & k1_numbers k1_numbers X1 X0)) (k7_relset_1 k1_numbers k1_numbers \\ & X1 X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & v5_valued_0 (k2_partfun1 k1_numbers k1_numbers k29_sin_cos (\\ & k2_rcomp_1 (k1_real_1 (k10_real_1 k32_sin_cos np_2)) (k10_real_1 \\ & k32_sin_cos np_2))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (v1_relat_1 X2) \Rightarrow ((r1_tarski \\ & X0 X1) \Rightarrow (k5_relat_1 (k5_relat_1 X2 X0) X1 = k5_relat_1 X2 X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski \\ & X0 X1) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow(k10_xtuple_0 (k5_relat_1 X1 X0) = k7_relat_1 X1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2)\wedge(m2_subset_1 np_2 k1_numbers k5_numbers))\wedge \\ & ((m1_subset_1 np_2 k5_numbers)\wedge(m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(k7_relat_1 X0 X1 X2 X3 = k7_relat_1 X2 X3) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v2_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k2_partfun2 X0 X1 X2 = k2_funct_1 X2) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (9)$$

Assume the following.

$$\begin{aligned} & (v1_relat_1 (k5_relat_1 k29_sin_cos (k2_rcomp_1 (k1_real_1 (\\ & k10_real_1 k32_sin_cos np_2)) (k10_real_1 k32_sin_cos np_2))))\wedge \\ & (v2_funct_1 (k5_relat_1 k29_sin_cos (k2_rcomp_1 (k1_real_1 (\\ & k10_real_1 k32_sin_cos np_2)) (k10_real_1 k32_sin_cos np_2)))) \end{aligned} \quad (10)$$

Assume the following.

$$m1_subset_1 k32_sin_cos k1_numbers \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(m1_subset_1 (k2_rcomp_1 X0 X1) (k1_zfmisc_1 k1_numbers)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 (k2_partfun1 X0 X1 X2 X3)\wedge(m1_subset_1 (k2_partfun1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \quad (13)$$

Assume the following.

$$(v1_funct_1 \ k29_sin_cos) \wedge (m1_subset_1 \ k29_sin_cos \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers))) \quad (14)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (m1_subset_1 \ (k1_real_1 \ X0) \ k1_numbers) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k1_numbers) \wedge (v1_xreal_0 \ X1)) \Rightarrow (m1_subset_1 \ (k10_real_1 \ X0 \ X1) \ k1_numbers) \quad (16)$$

Assume the following.

$$k1_sin_cos9 = k2_partfun2 \ k1_numbers \ k1_numbers \ (k2_partfun1 \ k1_numbers \ k1_numbers \ k29_sin_cos \ (k2_rcomp_1 \ (k1_real_1 \ (k10_real_1 \ k32_sin_cos \ np_2))) \ (k10_real_1 \ k32_sin_cos \ np_2))) \quad (17)$$

Assume the following.

$$\forall X0. (v1_xreal_0 \ X0) \Rightarrow (v1_xxreal_0 \ X0) \quad (18)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (v1_xreal_0 \ X0) \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1))) \Rightarrow (v1_relat_1 \ X2) \quad (20)$$

Theorem 1

$$v5_valued_0 \ (k2_partfun1 \ k1_numbers \ k1_numbers \ k1_sin_cos9 \ (k7_relset_1 \ k1_numbers \ k1_numbers \ k29_sin_cos \ (k2_rcomp_1 \ (k1_real_1 \ (k10_real_1 \ k32_sin_cos \ np_2))) \ (k10_real_1 \ k32_sin_cos \ np_2))))$$