

t19_comp trig
(TMd2XGeWLJDRw3WAFfjUn4XhTsEQoHsXvoB)

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Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k16_sin_cos : \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ 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 $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & \quad X1 k1_numbers) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 \\ & \quad (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (((r1_tarski \\ & \quad (k2_rcomp_1 X0 X1) (k1_relset_1 k1_numbers X2)) \wedge ((r2_fdiff_1 \\ & \quad X2 (k2_rcomp_1 X0 X1)) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow \\ & \quad (\neg(X3 \in k2_rcomp_1 X0 X1) \wedge (r1_xxreal_0 (k1_fdiff_1 X2 X3) k6_numbers)))))) \Rightarrow \\ & \quad (v5_valued_0 (k2_partfun1 k1_numbers k1_numbers X2 (k2_rcomp_1 \\ & \quad \quad X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (v3_rcomp_1 (k2_rcomp_1 X0 X1))) \tag{2}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((r2_fdiff_1 k16_sin_cos k1_numbers) \wedge (k1_fdiff_1 k16_sin_cos X0 = k1_seq_1 k19_sin_cos X0)) \tag{3}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v3_rcomp_1 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ k1_numbers)))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge(m1_subset_1 X2 \\ (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))))\Rightarrow(((r2_fdiff_1 \\ X2 X0)\wedge(r1_tarski X1 X0))\Rightarrow(r2_fdiff_1 X2 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$(k1_relset_1 k1_numbers k16_sin_cos = k1_numbers)\wedge(k1_relset_1 \\ k1_numbers k19_sin_cos = k1_numbers) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0)\Rightarrow(\neg(X0 \in k2_rcomp_1 (k1_real_1 (k10_real_1 \\ k32_sin_cos np_2)) (k10_real_1 k32_sin_cos np_2))\wedge(r1_xxreal_0 \\ (k1_seq_1 k19_sin_cos X0) k6_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} ((v2_xxreal_0 np_2)\wedge(m2_subset_1 np_2 k1_numbers k5_numbers))\wedge \\ ((m1_subset_1 np_2 k5_numbers)\wedge(m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$m1_subset_1 k32_sin_cos k1_numbers \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(\\ m1_subset_1 (k2_rcomp_1 X0 X1) (k1_zfmisc_1 k1_numbers)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(m1_subset_1 (k1_real_1 \\ X0) k1_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} (v1_funct_1 k16_sin_cos)\wedge((v1_funct_2 k16_sin_cos k1_numbers \\ k1_numbers)\wedge(m1_subset_1 k16_sin_cos (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 \\ X1))\Rightarrow(m1_subset_1 (k10_real_1 X0 X1) k1_numbers) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(v1_xxreal_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (15)$$

Theorem 1

v5_valued_0 (k2_partfun1 k1_numbers k1_numbers k16_sin_cos (
k2_rcomp_1 (k1_real_1 (k10_real_1 k32_sin_cos np_2)) (k10_real_1
k32_sin_cos np_2)))