

t26_integra8 (TMSFo-
HxjR1C14US4y7SWTaRyfZWQN5ULpea)

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Let $r2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k32_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_subset_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((r2_fdiff_1 k19_sin_cos k1_numbers) \wedge (k1_fdiff_1 k19_sin_cos X0 = k1_real_1 (k1_seq_1 k16_sin_cos X0))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow ((r1_fdiff_1 (k32_valued_1 k1_numbers k1_numbers k19_sin_cos) X0) \wedge (k1_fdiff_1 (k32_valued_1 k1_numbers k1_numbers k19_sin_cos) X0 = k3_funct_2 k1_numbers k1_numbers k16_sin_cos X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ k1_numbers k1_numbers)))) \Rightarrow (\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow (((r1_tarski X1 (k9_xtuple_0 (\\ k32_valued_1 k1_numbers k1_numbers X0))) \wedge (r2_fdiff_1 X0 X1)) \Rightarrow \\ ((r2_fdiff_1 (k32_valued_1 k1_numbers k1_numbers X0) X1) \wedge (\forall X2. \\ (m1_subset_1 X2 k1_numbers) \Rightarrow ((X2 \in X1) \Rightarrow (k1_seq_1 (k2_fdiff_1 \\ (k32_valued_1 k1_numbers k1_numbers X0) X1) X2 = k1_real_1 (k1_fdiff_1 \\ X0 X2))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v3_membered X1) \wedge ((v1_funct_1 \\ X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (k32_valued_1 \\ X0 X1 X2 = k30_valued_1 X2) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (6)$$

Assume the following.

$$\exists X0. (m1_subset_1 X0 k1_numbers) \wedge ((v1_xreal_0 X0) \wedge (\\ v1_xcmplx_0 X0) \wedge ((v1_xreal_0 X0) \wedge (v1_int_1 X0))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v1_xboole_0 X1) \wedge (v3_membered \\ X1)) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 \\ (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((v1_funct_1 (k30_valued_1 \\ X2)) \wedge (v1_partfun1 (k30_valued_1 X2) X0)) \quad (8)$$

Assume the following.

$$v3_membered k1_numbers \quad (9)$$

Assume the following.

$$v3_rcomp_1 (k2_subset_1 k1_numbers) \quad (10)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_membered\ X1)\wedge((v1_funct_1 \\ & X2)\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))))\Rightarrow((v1_funct_1 \\ & (k32_valued_1\ X0\ X1\ X2))\wedge(m1_subset_1\ (k32_valued_1\ X0\ X1\ X2)\ (\\ & k1_zfmisc_1\ (k2_zfmisc_1\ X0\ k1_numbers)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.m1_subset_1\ (k2_subset_1\ X0)\ (k1_zfmisc_1\ X0) \quad (14)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1\ k19_sin_cos)\wedge((v1_funct_2\ k19_sin_cos\ k1_numbers \\ & k1_numbers)\wedge(m1_subset_1\ k19_sin_cos\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.k2_subset_1\ X0 = X0 \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))\Rightarrow(((X1\neq k1_xboole_0)\Rightarrow((v1_funct_2\ X2\ X0 \\ & X1)\Leftrightarrow(X0 = k1_relset_1\ X0\ X2)))\wedge((X1 = k1_xboole_0)\Rightarrow((v1_funct_2 \\ & X2\ X0\ X1)\Leftrightarrow(X2 = k1_xboole_0)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))\Rightarrow((v4_relat_1\ X2\ X0)\wedge(v5_relat_1\ X2\ X1)) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))\Rightarrow(v1_relat_1\ X2) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))\Rightarrow((v1_partfun1\ X2\ X0)\Rightarrow(v1_funct_2\ X2\ X0\ X1)) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} & (r2_fdiff_1\ (k32_valued_1\ k1_numbers\ k1_numbers\ k19_sin_cos) \\ & k1_numbers)\wedge(\forall X0.(m1_subset_1\ X0\ k1_numbers)\Rightarrow((X0 \in k1_numbers)\Rightarrow \\ & (k1_fdiff_1\ (k32_valued_1\ k1_numbers\ k1_numbers\ k19_sin_cos) \\ & X0 = k3_funct_2\ k1_numbers\ k1_numbers\ k16_sin_cos\ X0))) \end{aligned}$$