

t23_integra7

(TMNgdLuS7ZrSJDXtc8zxZJUy1vAyZrkDm8K)

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Let $r1_integra7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $k19_sin_cos : \iota$ 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 $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ 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 $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((r1_fdiff_1 k16_sin_cos X0) \wedge (k1_fdiff_1 k16_sin_cos X0 = k1_seq_1 k19_sin_cos X0)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k5_relat_1 X1 X0) = k3_xboole_0 (k9_xtuple_0 X1) X0) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X0 \in k9_xtuple_0 (k5_relat_1 X2 X1)) \Rightarrow (k1_funct_1 (k5_relat_1 X2 X1) X0 = k1_funct_1 X2 X0)) \quad (4)$$

Assume the following.

$$(k1_relset_1 \ k1_numbers \ k16_sin_cos = k1_numbers) \wedge (k1_relset_1 \ k1_numbers \ k19_sin_cos = k1_numbers) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1))) \wedge (m1_subset_1 \ X3 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))) \Rightarrow ((r2_relset_1 \ X0 \ X1 \ X2 \ X3) \Leftrightarrow (X2 = X3)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1)))) \Rightarrow (k2_partfun1 \ X0 \ X1 \ X2 \ X3 = k5_relat_1 \ X2 \ X3) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v3_valued_0 \ X0))) \Rightarrow (k1_seq_1 \ X0 \ X1 = k1_funct_1 \ X0 \ X1) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 \ X1) \wedge (v4_relat_1 \ X1 \ X0)) \Rightarrow (k1_relset_1 \ X0 \ X1 = k9_xtuple_0 \ X1) \quad (9)$$

Assume the following.

$$\exists X0. (m1_subset_1 \ X0 \ k1_numbers) \wedge ((v1_xreal_0 \ X0) \wedge ((v1_xcmplx_0 \ X0) \wedge ((v1_xreal_0 \ X0) \wedge (v1_int_1 \ X0)))) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))) \Rightarrow (\forall X2. ((v1_funct_1 \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))) \Rightarrow ((r1_intgra7 \ X0 \ X1 \ X2) \Leftrightarrow ((r2_fdiff_1 \ X1 \ X0) \wedge (r2_relset_1 \ k1_numbers \ k1_numbers \ (k2_fdiff_1 \ X1 \ X0) \ (k2_partfun1 \ k1_numbers \ k1_numbers \ X2 \ X0)))))) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. k3_xboole_0 \ X0 \ X0 = X0 \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 \ X0) \wedge (v3_valued_0 \ X0)) \Rightarrow ((v1_relat_1 \ (k5_relat_1 \ X0 \ X1)) \wedge (v3_valued_0 \ (k5_relat_1 \ X0 \ X1))) \quad (13)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (14)$$

Assume the following.

$$\neg v1_xboole_0\ k1_numbers \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v1_xboole_0\ X0)\wedge(v1_relat_1\ X0))\wedge \\ & ((\neg v1_xboole_0\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k9_xtuple_0 \\ & X0))))\Rightarrow((\neg v1_xboole_0\ (k5_relat_1\ X0\ X1))\wedge(v1_relat_1\ (k5_relat_1 \\ & X0\ X1))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1\ X2)\wedge \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow((v1_funct_1 \\ & (k2_partfun1\ X0\ X1\ X2\ X3))\wedge(m1_subset_1\ (k2_partfun1\ X0\ X1\ X2\ X3) \\ & (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1\ X0)\wedge(m1_subset_1\ X0\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ k1_numbers\ k1_numbers))))\Rightarrow((v1_funct_1\ (k2_fdiff_1 \\ & X0\ X1))\wedge(m1_subset_1\ (k2_fdiff_1\ X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers)))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1\ X1)\wedge(v4_relat_1\ X1\ X0))\Rightarrow(\\ & m1_subset_1\ (k1_relset_1\ X0\ X1)\ (k1_zfmisc_1\ X0)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1\ k19_sin_cos)\wedge((v1_funct_2\ k19_sin_cos\ k1_numbers \\ & k1_numbers)\wedge(m1_subset_1\ k19_sin_cos\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers)))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1\ k16_sin_cos)\wedge((v1_funct_2\ k16_sin_cos\ k1_numbers \\ & k1_numbers)\wedge(m1_subset_1\ k16_sin_cos\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers)))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0)\wedge(m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & k1_numbers\ k1_numbers))))\Rightarrow(\forall X1.(r2_fdiff_1\ X0\ X1)\Rightarrow(\forall X2. \\ & ((v1_funct_1\ X2)\wedge(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers \\ & k1_numbers))))\Rightarrow((X2 = k2_fdiff_1\ X0\ X1)\Leftrightarrow((k1_relset_1\ k1_numbers \\ & X2 = X1)\wedge(\forall X3.(m1_subset_1\ X3\ k1_numbers)\Rightarrow((X3 \in X1)\Rightarrow(k1_seq_1 \\ & X2\ X3 = k1_fdiff_1\ X0\ X3)))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow \\ & (((v1_funct_1 X2)\wedge(v1_funct_2 X2 X0 X1))\Rightarrow((v1_funct_1 X2)\wedge((\\ & \neg v1_xboole_0 X2)\wedge(v1_funct_2 X2 X0 X1)))))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v3_membered X1)\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v3_valued_0 X2)) \end{aligned} \quad (27)$$

Theorem 1 $r1_intgra7$ $k1_numbers$ $k16_sin_cos$ $k19_sin_cos$.