

t14_fcont_1 (TMQ-
PHYMM8wqEPgsmmnABN5pxyCWZLGfb4S)

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Let $v1_funct_1 : \iota \Rightarrow o$ 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 $k1_numbers : \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_fcont_1 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_fcont_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k5_relat_1 X1 X0) = k3_xboole_0 (k9_xtuple_0 X1) X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X0 \in k9_xtuple_0 (k5_relat_1 X2 X1)) \Rightarrow (k1_funct_1 (k5_relat_1 X2 X1) X0 = k1_funct_1 X2 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1_xreal_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow ((r1_fcont_1 X1 X0) \Leftrightarrow (\forall X2. (v1_xreal_0 X2) \Rightarrow (\neg(\neg r1_xxreal_0 X2 k6_numbers) \wedge (\forall X3. (v1_xreal_0 X3) \Rightarrow (\neg(\neg r1_xxreal_0 X3 k6_numbers) \wedge (\forall X4. (v1_xreal_0 X4) \Rightarrow (\neg(X4 \in k1_relset_1 k1_numbers X1) \wedge ((\neg r1_xxreal_0 X3 (k18_complex1 (k6_xcmplx_0 X4 X0))) \wedge (r1_xxreal_0 X2 (k18_complex1 (k9_real_1 (k1_seq_1 X1 X4) (k1_seq_1 X1 X0)))))))))))))) \quad (3) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Rightarrow (k3_xboole_0 X0 X1 = X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (7)$$

Assume the following.

$$v3_membered k1_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X0)\Rightarrow(v1_relat_1 (k5_relat_1 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 (k2_partfun1 X0 X1 X2 X3))\wedge(m1_subset_1 (k2_partfun1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \quad (10)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))))\Rightarrow((v1_fcont_1 X0)\Leftrightarrow(\forall X1.(v1_xreal_0 X1)\Rightarrow((X1 \in k1_relset_1 k1_numbers X0)\Rightarrow(r1_fcont_1 X0 X1)))) \quad (11)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3_membered\ X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (v3_valued_0\ X2)) \end{aligned} \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \Rightarrow ((r1_tarski\ X0\ (k1_relset_1 \\ & k1_numbers\ X1)) \Rightarrow ((v1_fcont_1\ (k2_partfun1\ k1_numbers\ k1_numbers \\ & X1\ X0)) \Leftrightarrow (\forall X2. (v1_xreal_0\ X2) \Rightarrow (\forall X3. (v1_xreal_0 \\ & X3) \Rightarrow (\neg(X2 \in X0) \wedge ((\neg r1_xxreal_0\ X3\ k6_numbers) \wedge (\forall X4. (v1_xreal_0 \\ & X4) \Rightarrow (\neg(\neg r1_xxreal_0\ X4\ k6_numbers) \wedge (\forall X5. (v1_xreal_0 \\ & X5) \Rightarrow (\neg(X5 \in X0) \wedge ((\neg r1_xxreal_0\ X4\ (k18_complex1\ (k6_xcmplx_0 \\ & X5\ X2)))) \wedge (r1_xxreal_0\ X3\ (k18_complex1\ (k9_real_1\ (k1_seq_1\ X1 \\ & X5)\ (k1_seq_1\ X1\ X2))))))))))))))))) \end{aligned}$$