

t19_fcont_3 (TMJwMhUPAXoPx- CHXnx4z7g6CXy2opTMaZ5X)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ 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 $k3_limfunct_1 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_valued_0 : \iota \Rightarrow o$ be given. Let $v1_fcont_1 : \iota \Rightarrow o$ be given. Let $k2_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_rfunct_2 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $v8_valued_0 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $v7_valued_0 : \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow (k9_xtuple_0 (k5_relat_1 \\ & X1 X0) = k3_xboole_0 (k9_xtuple_0 X1) X0) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski \\ & X0 X1) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v2_funct_1 X0) \Rightarrow \\ & ((k10_xtuple_0 X0 = k9_xtuple_0 (k2_funct_1 X0)) \wedge (k9_xtuple_0 \\ & X0 = k10_xtuple_0 (k2_funct_1 X0)))) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski\ X0\ X1)\Rightarrow(k3_xboole_0\ X0\ X1 = X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1_tarski\ X0\ X1)\Rightarrow(r1_tarski\ (k3_xboole_0\ X0\ X2)\ (k3_xboole_0\ X1\ X2)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1\ X1)\wedge((v1_funct_1\ X1)\wedge(v2_funct_1\ X1)))\Rightarrow(k2_funct_1\ (k5_relat_1\ X1\ X0) = k5_relat_1\ (k2_funct_1\ X1)\ (k7_relat_1\ X1\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_funct_1\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers))))\Rightarrow(((r1_tarski\ X0\ (k1_relset_1\ k1_numbers\ X1))\wedge(v1_rfunct_2\ (k2_partfun1\ k1_numbers\ k1_numbers\ X1\ X0)))\Rightarrow((\forall X2.(m1_subset_1\ X2\ k1_numbers)\Rightarrow(k7_relset_1\ k1_numbers\ k1_numbers\ X1\ X0\neq k3_limfunc1\ X2))\vee(v1_fcont_1\ (k2_partfun1\ k1_numbers\ k1_numbers\ X1\ X0)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1\ X1)\Rightarrow(k10_xtuple_0\ (k5_relat_1\ X1\ X0) = k7_relat_1\ X1\ X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1_relat_1\ X0)\Rightarrow(k7_relat_1\ X0\ (k9_xtuple_0\ X0) = k10_xtuple_0\ X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_funct_1\ X1)\wedge((v2_funct_1\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers))))\Rightarrow((v6_valued_0\ (k2_partfun1\ k1_numbers\ k1_numbers\ X1\ X0))\Rightarrow(v6_valued_0\ (k2_partfun1\ k1_numbers\ k1_numbers\ (k2_partfun2\ k1_numbers\ k1_numbers\ (k2_partfun1\ k1_numbers\ k1_numbers\ X1\ X0))\ (k7_relset_1\ k1_numbers\ k1_numbers\ X1\ X0)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(k7_relset_1\ X0\ X1\ X2\ X3 = k7_relat_1\ X2\ X3) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v2_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow(k2_partfun2 X0 X1 X2 = k2_funct_1 X2) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow(k2_partfun1 X0 X1 X2 X3 = k5_relat_1 X2 X3) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v1_relat_1 (k5_relat_1 X0 X1))\wedge(v1_funct_1 (k5_relat_1 X0 X1))) \quad (16)$$

Assume the following.

$$v3_membered k1_numbers \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v2_funct_1 X1)))\Rightarrow((v1_relat_1 (k5_relat_1 X1 X0))\wedge(v2_funct_1 (k5_relat_1 X1 X0))) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X0)\Rightarrow(v1_relat_1 (k5_relat_1 X0 X1)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v2_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))\Rightarrow((v1_funct_1 (k2_partfun2 X0 X1 X2))\wedge(m1_subset_1 (k2_partfun2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow((v1_funct_1 (k2_partfun1 X0 X1 X2 X3))\wedge(m1_subset_1 (k2_partfun1 X0 X1 X2 X3) (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \quad (21)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 (k2_funct_1 X0)) \wedge (v1_funct_1 (k2_funct_1 X0))) \quad (22)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (m1_subset_1 (k1_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (23)$$

Assume the following.

$$\forall X0. \forall X1. k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (24)$$

Assume the following.

$$\forall X0. (v3_membered X0) \Rightarrow (v2_membered X0) \quad (25)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))) \Rightarrow ((v1_funct_1 X0) \wedge (v8_valued_0 X0)) \Rightarrow ((v1_funct_1 X0) \wedge (v1_rfunct_2 X0)) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (27)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v2_valued_0 X0) \wedge (v6_valued_0 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v2_valued_0 X0) \wedge (v8_valued_0 X0)))) \quad (28)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v2_valued_0 X0) \wedge (v5_valued_0 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v2_valued_0 X0) \wedge (v7_valued_0 X0)))) \quad (29)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))) \Rightarrow ((v1_funct_1 X0) \wedge (v7_valued_0 X0)) \Rightarrow ((v1_funct_1 X0) \wedge (v1_rfunct_2 X0)) \quad (30)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (31)$$

Assume the following.

$$\forall X0. \forall X1. (v2_membered X1) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v2_valued_0 X2)) \quad (32)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v1_funct_1 \\ & X1) \wedge ((v2_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers)))))) \Rightarrow ((r1_tarski (k3_limfunc1 X0) (k1_relset_1 \\ & k1_numbers X1)) \Rightarrow (((\neg v5_valued_0 (k2_partfun1 k1_numbers k1_numbers \\ & X1 (k3_limfunc1 X0))) \wedge (\neg v6_valued_0 (k2_partfun1 k1_numbers \\ & k1_numbers X1 (k3_limfunc1 X0)))) \vee (v1_fcont_1 (k2_partfun1 k1_numbers \\ & k1_numbers (k2_partfun2 k1_numbers k1_numbers (k2_partfun1 k1_numbers \\ & k1_numbers X1 (k3_limfunc1 X0))) (k7_relset_1 k1_numbers k1_numbers \\ & X1 (k3_limfunc1 X0)))))) \end{aligned}$$