

t31_ndiff_5

(TMGf9bQf2QfDHxKRQwxGzeu7taNEYh5NCnR)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v2_prvect_2 : \iota \Rightarrow o$ be given. Let $v1_ndiff_5 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k14_prvect_2 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_prvect_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k4_prvect_2 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_prvect_2 : \iota \Rightarrow o$ be given. Let $k1_ndiff_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((\neg v1_xboole_0 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (\forall X1.(m2_subset_1 \\ & X1 k5_numbers (k4_finseq_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (\\ & u1_struct_0 (k14_prvect_2 X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k4_card_3 (k4_prvect_2 X0))) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ & (k11_prvect_2 X0 X1)))) \Rightarrow (((X3 = X2) \wedge (X4 = k1_funct_1 X3 X1)) \Rightarrow (r1_xxreal_0 \\ & (k1_normsp_0 (k11_prvect_2 X0 X1) X4) (k1_normsp_0 (k14_prvect_2 \\ & X0) X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (u1_struct_0 (k14_prvect_2 \\ & X0) = k4_card_3 (k4_prvect_2 X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 X1 X2 X3 = k1_funct_1 X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0))))))\wedge((m1_subset_1 X1 (k4_card_3 (k4_prvect_2 X0)))\wedge(m1_subset_1 X2 (k4_finseq_1 X0))))\Rightarrow(k1_ndiff_5 X0 X1 X2 = k1_funct_1 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0)\wedge(v1_relat_1 X0))\Rightarrow(\neg v1_xboole_0 (k9_xtuple_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v2_relat_1 X0)\wedge(v1_funct_1 X0)))\Rightarrow(\neg v1_xboole_0 (k4_card_3 X0)) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((\neg v1_xboole_0 X0)\wedge((v1_finseq_1 X0)\wedge(v1_prvect_2 X0))))))\Rightarrow((v1_relat_1 (k4_prvect_2 X0)\wedge((v2_relat_1 (k4_prvect_2 X0)\wedge((v1_funct_1 (k4_prvect_2 X0)\wedge((\neg v1_xboole_0 (k4_prvect_2 X0)\wedge(v1_finseq_1 (k4_prvect_2 X0))))))))) \quad (9)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow(m1_subset_1 (k4_finseq_1 X0) (k1_zfmisc_1 k5_numbers)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge((v1_finseq_1 X0)\wedge(v2_prvect_2 X0))))))\wedge(m1_subset_1 X1 (k4_finseq_1 X0)))\Rightarrow((v1_funct_1 (k3_ndiff_5 X0 X1)\wedge((v1_funct_2 (k3_ndiff_5 X0 X1) (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 (k11_prvect_2 X0 X1)))\wedge(m1_subset_1 (k3_ndiff_5 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 (k11_prvect_2 X0 X1))))))) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge (v2_prvect_2 X0)))))) \Rightarrow (\forall X1. (m2_subset_1 \\ & X1 k5_numbers (k4_finseq_1 X0)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 \\ & (k11_prvect_2 X0 X1))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 (k14_prvect_2 X0)) (u1_struct_0 (k11_prvect_2 X0 \\ & X1)))))) \Rightarrow ((X2 = k3_ndiff_5 X0 X1) \Leftrightarrow (\forall X3. (m1_subset_1 X3 \\ & (k4_card_3 (k4_prvect_2 X0)) \Rightarrow (k1_funct_1 X2 X3 = k1_ndiff_5 X0 \\ & X3 X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 \\ & X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & ((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge \\ & (v1_finseq_1 X0)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge ((v1_finseq_1 \\ & X0) \wedge (v2_prvect_2 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge \\ & ((v1_finseq_1 X0) \wedge (v1_prvect_2 X0)))) \end{aligned} \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finseq_1 X0) \wedge ((v2_prvect_2 X0) \wedge (v1_ndiff_5 X0)))))) \Rightarrow \\ & (\forall X1. (m2_subset_1 X1 k5_numbers (k4_finseq_1 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 (k14_prvect_2 X0)) \Rightarrow (r1_xreal_0 \\ & (k1_normsp_0 (k11_prvect_2 X0 X1) (k3_funct_2 (u1_struct_0 (k14_prvect_2 \\ & X0)) (u1_struct_0 (k11_prvect_2 X0 X1)) (k3_ndiff_5 X0 X1) X2)) \\ & (k1_normsp_0 (k14_prvect_2 X0) X2)))) \end{aligned}$$