

l15_pdiff_7 (TMci-
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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_finseq_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k5_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_euclid : \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $v3_relat_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.\forall X2. \\ & \forall X3.(X2 \neq X3) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X3 = k1_funct_1 \\ & \quad X0 X3)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.\forall X2. \\ & (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 (k2_funct_7 X0 X2 X1) X2 = X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0)\Rightarrow(\forall X2.(m2_finseq_2 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Leftrightarrow(m1_finseq_1 X1 X0) \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((v7_ordinal1 X1)\wedge(m1_subset_1 X2 X0)))\Rightarrow(k5_finseq_2 X0 X1 X2 = k2_finseq_2 X1 X2) \quad (9)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(k5_euclid X0 = k4_euclid X0) \quad (10)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(k2_finseq_1 X0 = k1_finseq_1 X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((m1_finseq_1 X1 X0)\wedge((v7_ordinal1 X2)\wedge(m1_subset_1 X3 X0))))\Rightarrow(k1_finseq_7 X0 X1 X2 X3 = k2_funct_7 X1 X2 X3) \quad (13)$$

Assume the following.

$$\begin{aligned} \exists X0.(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ k5_numbers))) \wedge ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ X0 k5_numbers) \wedge ((v5_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge \\ ((v1_partfun1 X0 k5_numbers) \wedge ((v1_funct_2 X0 k5_numbers k5_numbers) \wedge \\ ((v1_valued_0 X0) \wedge ((v2_valued_0 X0) \wedge ((v3_valued_0 X0) \wedge ((v4_valued_0 \\ X0) \wedge (v5_valued_0 X0)))))))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow ((v1_relat_1 (k2_finseq_2 X0 k6_numbers)) \wedge \\ ((v3_relat_1 (k2_finseq_2 X0 k6_numbers)) \wedge ((v1_funct_1 (k2_finseq_2 \\ X0 k6_numbers)) \wedge (v1_finseq_1 (k2_finseq_2 X0 k6_numbers)))))) \end{aligned} \quad (15)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (16)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (17)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\neg v1_xboole_0 (k1_euclid X0)) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v3_relat_1 X0) \wedge (v1_funct_1 \\ X0))) \Rightarrow (v1_xboole_0 (k1_funct_1 X0 X1)) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Rightarrow (m1_subset_1 X2 X0)) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ X2 X0 X1) \Rightarrow (m2_finseq_1 X2 X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (\\ (v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \quad (22)$$

Assume the following.

$$m2_subset_1 k6_numbers k1_numbers k5_numbers \quad (23)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (m2_finseq_2 \ (k5_euclid \ X0) \ k1_numbers \ (k1_euclid \ X0)) \quad (25)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow ((v1_relat_1 \ (k4_euclid \ X0)) \wedge ((v1_funct_1 \ (k4_euclid \ X0)) \wedge ((v1_finseq_1 \ (k4_euclid \ X0)) \wedge (v3_valued_0 \ (k4_euclid \ X0)))))) \quad (26)$$

Assume the following.

$$\forall X0.((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow (m2_subset_1 \ (k3_finseq_1 \ X0) \ k1_numbers \ k5_numbers) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 \ X0) \wedge ((m1_finseq_1 \ X1 \ X0) \wedge ((v7_ordinal1 \ X2) \wedge (m1_subset_1 \ X3 \ X0)))) \Rightarrow (m2_finseq_1 \ (k1_finseq_7 \ X0 \ X1 \ X2 \ X3) \ X0) \quad (28)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (m1_finseq_2 \ (k1_euclid \ X0) \ k1_numbers) \quad (29)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (\forall X1.k4_finseq_2 \ X0 \ X1 = \text{ReplSep} \ (t\text{oset} \ (\lambda X2 : \iota.m2_finseq_2 \ X2 \ X1 \ (k3_finseq_2 \ X1))) \ (\lambda X2 : \iota.k3_finseq_1 \ X2 = X0) \ (\lambda X2 : \iota.X2)) \quad (30)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (k4_euclid \ X0 = k5_finseq_2 \ k1_numbers \ X0 \ k6_numbers) \quad (31)$$

Assume the following.

$$\forall X0.((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow (\forall X1.(m2_subset_1 \ X1 \ k1_numbers \ k5_numbers) \Rightarrow ((X1 = k3_finseq_1 \ X0) \Leftrightarrow (k2_finseq_1 \ X1 = k9_xtuple_0 \ X0))) \quad (32)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (k1_finseq_1 \ X0 = \text{ReplSep} \ (t\text{oset} \ (\lambda X1 : \iota.m2_subset_1 \ X1 \ k1_numbers \ k5_numbers)) \ (\lambda X1 : \iota.(r1_xxreal_0 \ np_1 \ X1) \wedge (r1_xxreal_0 \ X1 \ X0)) \ (\lambda X1 : \iota.X1)) \quad (33)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(k1_euclid\ X0 = k4_finseq_2\ X0\ k1_numbers) \quad (34)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0\ X0)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X1\ X0)))\Rightarrow(v1_xboole_0\ X2)) \quad (35)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1\ X1\ X0)\Rightarrow(v5_relat_1\ X1\ X0) \quad (36)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0)\wedge(v5_relat_1\ X0\ k1_numbers))\Rightarrow((v1_relat_1\ X0)\wedge(v3_valued_0\ X0)) \quad (37)$$

Assume the following.

$$\forall X0.(v6_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow(v7_ordinal1\ X1)) \quad (38)$$

Theorem 1

$$\forall X0.((\neg v1_xboole_0\ X0)\wedge(m1_subset_1\ X0\ k5_numbers))\Rightarrow(\forall X1.(m1_subset_1\ X1\ k1_numbers)\Rightarrow(\forall X2.(m1_subset_1\ X2\ k5_numbers)\Rightarrow(\forall X3.(m1_subset_1\ X3\ k5_numbers)\Rightarrow(((r1_xxreal_0\ np_1\ X3)\wedge(r1_xxreal_0\ X3\ X0))\Rightarrow(((X2 = X3)\Rightarrow(k1_seq_1\ (k1_finseq_7\ k1_numbers\ (k5_euclid\ X0)\ X2\ X1)\ X3 = X1))\wedge((X2\neq X3)\Rightarrow(k1_seq_1\ (k1_finseq_7\ k1_numbers\ (k5_euclid\ X0)\ X2\ X1)\ X3 = k6_numbers))))))))$$