

l55_scmpds_6

(TMJbd7uAdNU6Dw5JYsFU21oYzDHuZJjD6Cr)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmpds_2 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_afinsq_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k61_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k9_compos_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_2 : \iota$ be given. Assume the following.

$$\forall X0.(l1_compos_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_compos_1 X0)) \Rightarrow (k5_card_1 (k9_compos_1 X0 X1) = np_1)) \quad (1)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (r1_tarski X0 (k1_funct_4 X1 X0))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 X0) \wedge ((v4_relat_1 \\ & X0 k5_numbers) \wedge ((v5_relat_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\ & (v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\\ & \forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (\\ & r1_tarski (k61_valued_1 (k10_compos_1 k1_scmpds_2 X1) (k5_card_1 \\ & X0)) (k10_compos_1 k1_scmpds_2 (k1_scmpds_4 X0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 np_1 \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((l1_compos_1 X0) \wedge (m1_subset_1 X1 (u1_compos_1 X0))) \Rightarrow (k9_compos_1 X0 X1 = k3_afinsq_1 X1) \quad (6)$$

Assume the following.

$$\forall X0. (v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (7)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_card_1 X0 = k9_xtuple_0 X0) \quad (8)$$

Assume the following.

$$\forall X0. (v5_ordinal1 (k3_afinsq_1 X0)) \wedge (v1_finset_1 (k3_afinsq_1 X0)) \quad (9)$$

Assume the following.

$$\forall X0. (v1_relat_1 (k3_afinsq_1 X0)) \wedge (v1_funct_1 (k3_afinsq_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v1_xboole_0 (k9_xtuple_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. (l1_extpro_1 X1 X0) \Rightarrow ((l1_memstr_0 X1 X0) \wedge (l1_compos_1 X1)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_compos_1 X0) \wedge (m1_subset_1 X1 (u1_compos_1 \\ & X0))) \Rightarrow ((v1_relat_1 (k9_compos_1 X0 X1)) \wedge ((v4_relat_1 (k9_compos_1 \\ & X0 X1) k5_numbers) \wedge ((v5_relat_1 (k9_compos_1 X0 X1) (u1_compos_1 \\ & X0)) \wedge ((v1_funct_1 (k9_compos_1 X0 X1)) \wedge (v1_finset_1 (k9_compos_1 \\ & X0 X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1))))))) \Rightarrow ((\neg v1_xboole_0 (\\ & k2_scmpds_4 X0 X1)) \wedge ((v1_relat_1 (k2_scmpds_4 X0 X1)) \wedge ((v4_relat_1 \\ & (k2_scmpds_4 X0 X1) k5_numbers) \wedge ((v5_relat_1 (k2_scmpds_4 X0 \\ & X1) (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 (k2_scmpds_4 X0 \\ & X1)) \wedge ((v1_finset_1 (k2_scmpds_4 X0 X1)) \wedge (v1_afinsq_1 (k2_scmpds_4 \\ & X0 X1)))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$(v1_extpro_1 k1_scmpds_2 np_2) \wedge (l1_extpro_1 k1_scmpds_2 np_2) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_compos_1 X0) \wedge ((v1_relat_1 X1) \wedge ((\\ & v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 X0)) \wedge \\ & ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow \\ & ((v1_relat_1 (k10_compos_1 X0 X1)) \wedge ((v4_relat_1 (k10_compos_1 \\ & X0 X1) k5_numbers) \wedge ((v5_relat_1 (k10_compos_1 X0 X1) (u1_compos_1 \\ & X0)) \wedge ((v1_funct_1 (k10_compos_1 X0 X1)) \wedge (v1_finset_1 (k10_compos_1 \\ & X0 X1)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (k2_scmpds_4 X0 X1 = \\ & k1_scmpds_4 (k9_compos_1 k1_scmpds_2 X0) X1)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ & X0) \wedge (v1_finset_1 X0)))) \Rightarrow ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge \\ & ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))) \end{aligned} \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 (u1_compos_1 k1_scmpds_2)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ & ((v5_relat_1 X1 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X1) \wedge \\ & ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (u1_compos_1 \\ & k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 k5_numbers)))))) \Rightarrow \\ & (r1_tarski (k61_valued_1 (k10_compos_1 k1_scmpds_2 X1) np_1) \\ & (k1_funct_4 X2 (k10_compos_1 k1_scmpds_2 (k2_scmpds_4 X0 X1)))))) \end{aligned}$$