

t18_scmpds_8

(TMXt343Qje38P4PEvYXMZH39Gqkm86bvtHu)

October 27, 2020

Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_scmpds_2 : \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ 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 $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_scmpds_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmpds_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
 & \quad (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
 & \quad k5_numbers) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge \\
 & ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 k1_scmpds_2)) \wedge \\
 & ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge (v1_afinsq_1 X3)))))) \Rightarrow \\
 & ((\neg r1_xxreal_0 (k2_nat_1 (k5_card_1 X3) np_2) X2) \Leftrightarrow (X2 \in k9_xtuple_0 \\
 & (k1_scmpds_8 X0 X1 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\
 & \quad (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((\\
 & \quad v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (\\
 & \quad u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge \\
 & (v1_afinsq_1 X2)))))) \Rightarrow (k5_card_1 (k1_scmpds_8 X0 X1 X2) = k2_nat_1 \\
 & (k5_card_1 X2) np_2)))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\ (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((\\ v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 X2 (\\ u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 X2) \wedge \\ (v1_afinsq_1 X2)))))) \Rightarrow (k5_card_1 (k2_scmpds_8 X0 X1 X2) = k2_nat_1 \\ (k5_card_1 X2) np_2))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_card_1 X0 = k9_xtuple_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_ami_2 X0) \wedge (m1_subset_1 \\ X0 (u1_struct_0 k1_scmpds_2))) \wedge ((v1_int_1 X1) \wedge ((\neg v1_xboole_0 \\ X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 \\ X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 \\ X2) \wedge (v1_afinsq_1 X2))))))))) \Rightarrow ((\neg v1_xboole_0 (k2_scmpds_8 X0 \\ X1 X2)) \wedge ((v1_relat_1 (k2_scmpds_8 X0 X1 X2)) \wedge ((v4_relat_1 (k2_scmpds_8 \\ X0 X1 X2) k5_numbers) \wedge ((v5_relat_1 (k2_scmpds_8 X0 X1 X2) (u1_compos_1 \\ k1_scmpds_2)) \wedge ((v1_funct_1 (k2_scmpds_8 X0 X1 X2)) \wedge ((v1_finset_1 \\ (k2_scmpds_8 X0 X1 X2)) \wedge (v1_afinsq_1 (k2_scmpds_8 X0 X1 X2)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_ami_2 X0) \wedge (m1_subset_1 \\ X0 (u1_struct_0 k1_scmpds_2))) \wedge ((v1_int_1 X1) \wedge ((\neg v1_xboole_0 \\ X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 k5_numbers) \wedge ((v5_relat_1 \\ X2 (u1_compos_1 k1_scmpds_2)) \wedge ((v1_funct_1 X2) \wedge ((v1_finset_1 \\ X2) \wedge (v1_afinsq_1 X2))))))))) \Rightarrow ((\neg v1_xboole_0 (k1_scmpds_8 X0 \\ X1 X2)) \wedge ((v1_relat_1 (k1_scmpds_8 X0 X1 X2)) \wedge ((v4_relat_1 (k1_scmpds_8 \\ X0 X1 X2) k5_numbers) \wedge ((v5_relat_1 (k1_scmpds_8 X0 X1 X2) (u1_compos_1 \\ k1_scmpds_2)) \wedge ((v1_funct_1 (k1_scmpds_8 X0 X1 X2)) \wedge ((v1_finset_1 \\ (k1_scmpds_8 X0 X1 X2)) \wedge (v1_afinsq_1 (k1_scmpds_8 X0 X1 X2)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge (v1_funct_1 X0))) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmpds_2))) \Rightarrow \\ & \quad (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\ & \quad k5_numbers) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge ((v1_relat_1 X3) \wedge \\ & ((v4_relat_1 X3 k5_numbers) \wedge ((v5_relat_1 X3 (u1_compos_1 k1_scmpds_2)) \wedge \\ & ((v1_funct_1 X3) \wedge ((v1_finset_1 X3) \wedge (v1_afinsq_1 X3)))))) \Rightarrow \\ & ((\neg r1_xxreal_0 (k2_nat_1 (k5_card_1 X3) np_2) X2) \Leftrightarrow (X2 \in k9_xtuple_0 \\ & (k2_scmpds_8 X0 X1 X3)))))) \end{aligned}$$