

t33_scmfsa_9 (TMP- BcwCjW4u3BUWGi5tYuhK6kFtj9NLfHxD)

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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 $k1_scmfsa_2 : \iota$ 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 $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_6 : \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k2_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k2_scmfsa_9 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmfsa_9 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ 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 $k1_xxreal_0 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\ & X0 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\forall X1.(\\ & (v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\\ & k5_card_1 (k2_scmfsa_9 X1 X0) = k2_nat_1 (k5_card_1 X0) np_6)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v5_relat_1 \\ & X0 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X0) \wedge ((v1_funct_1 \\ & X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow (\forall X1.(\\ & (v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\\ & k5_card_1 (k1_scmfsa_9 X1 X0) = k2_nat_1 (k5_card_1 X0) np_6)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X1) \wedge \\ ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1))))))) \Rightarrow \\ (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((\neg r1_xreal_0 \\ np_6 X2) \Rightarrow (k2_nat_1 (k5_card_1 X1) X2 \in k2_afinsq_1 (k1_scmfsa_9 \\ X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k2_afinsq_1 X0 = k9_xtuple_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_card_1 X0 = k9_xtuple_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 \\ k1_scmfsa_2))) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X1) \wedge \\ ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))))) \Rightarrow \\ ((v1_relat_1 (k2_scmfsa_9 X0 X1) \wedge ((v4_relat_1 (k2_scmfsa_9 \\ X0 X1) k5_numbers) \wedge ((v5_relat_1 (k2_scmfsa_9 X0 X1) (u1_compos_1 \\ k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 (k2_scmfsa_9 X0 X1)) \wedge ((v1_funct_1 \\ (k2_scmfsa_9 X0 X1) \wedge ((v1_finset_1 (k2_scmfsa_9 X0 X1) \wedge (v1_afinsq_1 \\ (k2_scmfsa_9 X0 X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 \\ k1_scmfsa_2))) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge \\ ((v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X1) \wedge \\ ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1)))))))) \Rightarrow \\ ((v1_relat_1 (k1_scmfsa_9 X0 X1) \wedge ((v4_relat_1 (k1_scmfsa_9 \\ X0 X1) k5_numbers) \wedge ((v5_relat_1 (k1_scmfsa_9 X0 X1) (u1_compos_1 \\ k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 (k1_scmfsa_9 X0 X1)) \wedge ((v1_funct_1 \\ (k1_scmfsa_9 X0 X1) \wedge ((v1_finset_1 (k1_scmfsa_9 X0 X1) \wedge (v1_afinsq_1 \\ (k1_scmfsa_9 X0 X1)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_afinsq_1 X0)))))) \Rightarrow ((v1_relat_1 X0) \wedge \\ ((v5_ordinal1 X0) \wedge (v1_funct_1 X0))) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge (\\ v5_relat_1 X1 (u1_compos_1 k1_scmfsa_2)) \wedge ((\neg v1_xboole_0 X1) \wedge \\ ((v1_funct_1 X1) \wedge ((v1_finset_1 X1) \wedge (v1_afinsq_1 X1))))))) \Rightarrow \\ (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((\neg r1_xxreal_0 \\ np_6 X2) \Rightarrow (k2_nat_1 (k5_card_1 X1) X2 \in k2_afinsq_1 (k2_scmfsa_9 \\ X0 X1)))))) \end{aligned}$$