

t19_scmring3

(TMd8RtuaFrRtLaNANZ4oAfYwv6qjWDMJ9HG)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmring2 : \iota \Rightarrow \iota$ be given. Let $k2_compos_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_7 : \iota$ be given. Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k9_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_5 : \iota$ be given. Let $k6_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_4 : \iota$ be given. Let $k5_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k3_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_scmring2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Let $np_6 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_compos_0 : \iota \Rightarrow o$ be given. Let $k4_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $v2_compos_0 : \iota \Rightarrow o$ be given. Let $v3_compos_0 : \iota \Rightarrow o$ be given. Let $v5_compos_0 : \iota \Rightarrow o$ 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 $k1_ami_2 : \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_scmring1 : \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_ami_2 : \iota$ be given. Let $u2_memstr_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_scmring1 : \iota \Rightarrow \iota$ be given. Let $u1_extpro_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_scmring1 : \iota \Rightarrow \iota$ be given. Let $k6_compos_0 : \iota \Rightarrow \iota$ be given.

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((\\
& v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow \\
& (k2_compos_0 (u1_compos_1 (k1_scmring2 X0)) (k7_scmring2 X0 X2 \\
& X1) = np_5))) \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 (k1_scmring2 \\
& X0)))) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (k2_compos_0 (u1_compos_1 (k1_scmring2 \\
& X0)) (k6_scmring2 X0 X1 X2) = np_4))) \tag{2}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 (k1_scmring2 \\
& X0)))) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (k2_compos_0 (u1_compos_1 (k1_scmring2 \\
& X0)) (k5_scmring2 X0 X1 X2) = np_3))) \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_compos_1 (k1_scmring2 X0))) \Leftrightarrow \\
& (\neg (X1 \neq k3_xtuple_0 k6_numbers k1_xboole_0 k1_xboole_0) \wedge ((\forall X2. \\
& ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow \\
& (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 X3 (u1_struct_0 (k1_scmring2 \\
& X0)))) \Rightarrow (X1 \neq k3_scmring2 X0 X2 X3)) \wedge ((\forall X2.((v1_ami_2 X2) \wedge \\
& (m1_subset_1 X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow (\forall X3. \\
& ((v1_ami_2 X3) \wedge (m1_subset_1 X3 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow \\
& (X1 \neq k4_scmring2 X0 X2 X3)) \wedge ((\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 \\
& X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge \\
& (m1_subset_1 X3 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow (X1 \neq k5_scmring2 \\
& X0 X2 X3)) \wedge ((\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (\forall X3.((v1_ami_2 X3) \wedge (m1_subset_1 \\
& X3 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow (X1 \neq k6_scmring2 X0 X2 X3))) \wedge \\
& ((\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow (X1 \neq k8_scmring2 X0 \\
& X2)) \wedge ((\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (\forall X3.(m1_subset_1 X3 k5_numbers) \Rightarrow \\
& (X1 \neq k9_scmring2 X0 X3 X2)) \wedge (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 \\
& X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0) \Rightarrow (X1 \neq k7_scmring2 X0 X2 X3))))))))))))) \tag{4}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
& (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 (k1_scmring2 \\
& X0)))) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (k2_compos_0 (u1_compos_1 (k1_scmring2 \\
& X0)) (k4_scmring2 X0 X1 X2) = np_2))) \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge (\\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\
& (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 (k1_scmring2 \\
& X0)))) \Rightarrow (\forall X2.((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& (k1_scmring2 X0)))) \Rightarrow (k2_compos_0 (u1_compos_1 (k1_scmring2 \\
& X0)) (k3_scmring2 X0 X1 X2) = np_1))) \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0))))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_compos_1 (k1_scmring2 X0))) \Rightarrow \\ & ((k2_compos_0 (u1_compos_1 (k1_scmring2 X0)) X1 = k6_numbers) \Rightarrow \\ & (X1 = k2_compos_1 (k1_scmring2 X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0))))))) \Rightarrow \\ & (\forall X1.((v1_ami_2 X1) \wedge (m1_subset_1 X1 (u1_struct_0 (k1_scmring2 \\ & X0)))) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow (k2_compos_0 \\ & (u1_compos_1 (k1_scmring2 X0)) (k9_scmring2 X0 X2 X1) = np_7))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ & (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0))))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 k5_numbers) \Rightarrow (k2_compos_0 (u1_compos_1 \\ & (k1_scmring2 X0)) (k8_scmring2 X0 X1) = np_6)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (10)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (11)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_compos_0 X0)) \wedge \\ & (m1_subset_1 X1 X0)) \Rightarrow (k2_compos_0 X0 X1 = k4_xtuple_0 X1) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. k1_xtuple_0 (k4_tarski X0 X1) = X0 \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\ (\exists X1.(m1_subset_1 X1 (u1_struct_0 (k1_scmring2 X0))) \wedge \\ (v1_ami_2 X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_compos_1 X0) \Rightarrow ((v1_compos_0 (u1_compos_1 X0)) \wedge \\ ((v2_compos_0 (u1_compos_1 X0)) \wedge ((v3_compos_0 (u1_compos_1 \\ X0)) \wedge (v5_compos_0 (u1_compos_1 X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(l1_extpro_1 X1 X0) \Rightarrow ((l1_memstr_0 X1 X0) \wedge \\ (l1_compos_1 X1)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 \\ X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 \\ X0)))))))))) \wedge ((m1_subset_1 X1 k5_numbers) \wedge ((v1_ami_2 X2) \wedge (m1_subset_1 \\ X2 (u1_struct_0 (k1_scmring2 X0)))))) \Rightarrow (m1_subset_1 (k9_scmring2 \\ X0 X1 X2) (u1_compos_1 (k1_scmring2 X0))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\ (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow \\ ((v1_extpro_1 (k1_scmring2 X0) np_2) \wedge (l1_extpro_1 (k1_scmring2 \\ X0) np_2)) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.k4_xtuple_0 X0 = k1_xtuple_0 (k1_xtuple_0 X0) \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.k3_xtuple_0 X0 X1 X2 = k4_tarski \\ (k4_tarski X0 X1) X2 \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.((v1_extpro_1 X1 \text{ np_}2) \wedge (l1_extpro_1 X1 \text{ np_}2)) \Rightarrow \\
& ((X1 = k1_scmring2 X0) \Leftrightarrow ((u1_struct_0 X1 = k1_ami_2) \wedge ((u2_struct_0 \\
& X1 = k5_numbers) \wedge ((u1_compos_1 X1 = k1_scmringi X0) \wedge ((r1_funct_2 \\
& (u1_struct_0 X1) \text{ np_}2 k1_ami_2 \text{ np_}2 (u1_memstr_0 \text{ np_}2 X1) k3_ami_2) \wedge \\
& ((u2_memstr_0 \text{ np_}2 X1 = k1_scmring1 X0) \wedge (u1_extpro_1 \text{ np_}2 X1 = \\
& k8_scmring1 X0)))))))))
\end{aligned} \tag{22}$$

Assume the following.

$$\forall X0.(v5_compos_0 X0) \Rightarrow (k6_compos_0 X0 = k3_xtuple_0 k6_numbers \\
k1_xboole_0 k1_xboole_0) \tag{23}$$

Assume the following.

$$\forall X0.(l1_compos_1 X0) \Rightarrow (k2_compos_1 X0 = k6_compos_0 (u1_compos_1 \\
X0)) \tag{24}$$

Assume the following.

$$\forall X0.(v5_compos_0 X0) \Rightarrow (\neg v1_xboole_0 X0) \tag{25}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge \\
& (v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_compos_1 (k1_scmring2 X0))) \Rightarrow \\
& (\neg (k2_compos_0 (u1_compos_1 (k1_scmring2 X0)) X1 = \text{np_}7) \wedge (\forall X2. \\
& ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 (k1_scmring2 X0)))) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 k5_numbers) \Rightarrow (X1 \neq k9_scmring2 X0 X3 \\
& X2))))))
\end{aligned}$$