

t20_grcat_1
(TMaXxFijfcCzTHc8zcYsvj5Ph8ZwTY5QS4f)

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Let $v1_grcat_1 : \iota \Rightarrow o$ be given. Let $v2_grcat_1 : \iota \Rightarrow o$ be given. Let $l1_grcat_1 : \iota \Rightarrow o$ be given. Let $k7_grcat_1 : \iota \Rightarrow \iota$ be given. Let $k8_grcat_1 : \iota \Rightarrow \iota$ be given. Let $k13_grcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $m1_grcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\ & \quad X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.((\neg \\ v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\ & \quad X1) \wedge (l2_algstr_0 X1)))))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((\\ v13_algstr_0 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l2_algstr_0 \\ & \quad X2)))))) \Rightarrow (\forall X3.(m1_grcat_1 X3 X1 X2) \Rightarrow (\forall X4.(m1_grcat_1 \\ & \quad X4 X0 X1) \Rightarrow (m1_grcat_1 (k13_grcat_1 X3 X4) X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_grcat_1 X0) \wedge (l1_grcat_1 X0)) \Rightarrow (\exists X1.((\\ \neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\ & \quad X1) \wedge (l2_algstr_0 X1)))))) \wedge (\exists X2.((\neg v2_struct_0 X2) \wedge ((\\ v13_algstr_0 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge (l2_algstr_0 \\ & \quad X2)))))) \wedge (m1_grcat_1 X0 X1 X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\ & \quad ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \wedge (\\ (\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\ & \quad X1) \wedge (l2_algstr_0 X1)))))) \Rightarrow (\forall X2.(m1_grcat_1 X2 X0 X1) \Rightarrow \\ & \quad ((v2_grcat_1 X2) \wedge (l1_grcat_1 X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_grcat_1 X0) \Rightarrow ((\neg v2_struct_0 (k8_grcat_1 X0)) \wedge \\ & \quad ((v13_algstr_0 (k8_grcat_1 X0)) \wedge ((v3_rlvect_1 (k8_grcat_1 X0)) \wedge \\ & \quad ((v4_rlvect_1 (k8_grcat_1 X0)) \wedge (l2_algstr_0 (k8_grcat_1 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& \quad X0) \wedge ((v4_rlvect_1 X0) \wedge (l2_algstr_0 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\
& \quad X1) \wedge (l2_algstr_0 X1)))))) \Rightarrow (\forall X2.((v2_grcat_1 X2) \wedge (l1_grcat_1 \\
& X2)) \Rightarrow ((m1_grcat_1 X2 X0 X1) \Leftrightarrow ((k7_grcat_1 X2 = X0) \wedge (k8_grcat_1 \\
& \quad X2 = X1))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_grcat_1 X0) \wedge ((v2_grcat_1 X0) \wedge (l1_grcat_1 X0))) \Rightarrow \\
& (\forall X1.((v1_grcat_1 X1) \wedge ((v2_grcat_1 X1) \wedge (l1_grcat_1 X1))) \Rightarrow \\
& ((k7_grcat_1 X1 = k8_grcat_1 X0) \Rightarrow ((k7_grcat_1 (k13_grcat_1 X1 \\
& X0) = k7_grcat_1 X0) \wedge (k8_grcat_1 (k13_grcat_1 X1 X0) = k8_grcat_1 \\
& \quad X1))))))
\end{aligned}$$