

t7_modcat_1 (TMd-
mjYNz6rN5dde6D3ASmQYiuC8f8HNUpSt)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_classes2 : \iota \Rightarrow o$ be given. 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 $k2_modcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v10_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_grcat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k17_grcat_1 : \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_modcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g2_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \wedge \\ & ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\ & v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 \\ & X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\neg v1_xboole_0 \\ & (k2_modcat_1 X0 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\
& v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 \\
& X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\forall X2. \\
& (X2 = k2_modcat_1 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.(X4 \in \\
& ReplSep2 (toset (\lambda X5 : \iota.m2_grcat_1 X5 (k17_grcat_1 X0))) \\
& (\lambda X5 : \iota.toset (\lambda X6 : \iota.m2_funct_2 X6 (k2_zfmisc_1 (u1_struct_0 \\
& X1) np_1) np_1 (k9_funct_2 (k2_zfmisc_1 (u1_struct_0 X1) np_1) \\
& np_1))) (\lambda X5 : \iota.\lambda X6 : \iota.True) (\lambda X5 : \iota.\lambda X6 : \\
& \iota.k4_tarski X5 X6)) \wedge (r1_modcat_1 X4 X3 X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
& X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge \\
& ((v3_group_1 X2) \wedge ((v4_vectsp_1 X2) \wedge ((v5_vectsp_1 X2) \wedge (l6_algstr_0 \\
& X2)))))))))) \Rightarrow ((r1_modcat_1 X0 X1 X2) \Leftrightarrow (\exists X3.\exists X4.(\\
& X0 = k4_tarski X3 X4) \wedge (\exists X5.((\neg v2_struct_0 X5) \wedge ((v13_algstr_0 \\
& X5) \wedge ((v2_rlvect_1 X5) \wedge ((v3_rlvect_1 X5) \wedge ((v4_rlvect_1 X5) \wedge \\
& ((v7_vectsp_1 X5 X2) \wedge ((v8_vectsp_1 X5 X2) \wedge ((v9_vectsp_1 X5 X2) \wedge \\
& ((v10_vectsp_1 X5 X2) \wedge ((v11_vectsp_1 X5 X2) \wedge (l1_vectsp_1 X5 X2)))))))))) \wedge \\
& ((X1 = X5) \wedge ((X3 = g2_algstr_0 (u1_struct_0 X5) (u1_algstr_0 X5) \\
& (u2_struct_0 X5)) \wedge (X4 = u1_vectsp_1 X2 X5))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\
& v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v3_group_1 X1) \wedge ((v4_vectsp_1 \\
& X1) \wedge ((v5_vectsp_1 X1) \wedge (l6_algstr_0 X1)))))))))) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (k2_modcat_1 X0 X1)) \Rightarrow ((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
& X2) \wedge ((v2_rlvect_1 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge \\
& ((v7_vectsp_1 X2 X1) \wedge ((v8_vectsp_1 X2 X1) \wedge ((v9_vectsp_1 X2 X1) \wedge \\
& ((v10_vectsp_1 X2 X1) \wedge ((v11_vectsp_1 X2 X1) \wedge (l1_vectsp_1 X2 X1))))))))))
\end{aligned}$$