

t34_bilinear (TMFagSWhhWvSzpcmG- bkJhGnJv5HzqAr9UaP)

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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 $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v3_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_vectsp_1 : \iota \Rightarrow o$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $k4_vectsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_algstr_0 : \iota \Rightarrow o$ be given. Let $l4_struct_0 : \iota \Rightarrow o$ be given. Let $l3_struct_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_vectsp_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
 & X0) \wedge ((v4_rlvect_1 X0) \wedge ((v2_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow \\
 & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 \\
 & (k4_struct_0 X0) X1 = k4_struct_0 X0))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 \\
& X2) \wedge (l1_vectsp_1 X2 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X2)) \Rightarrow (\forall X5. \\
& (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge \\
& ((v1_funct_2 X6 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) \\
& (u1_struct_0 X0)) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 \\
& X0)))))) \Rightarrow ((v3_bilinear X6 X0 X1 X2) \Rightarrow (k2_binop_1 (u1_struct_0 \\
& X1) (u1_struct_0 X2) (u1_struct_0 X0) X6 X3 (k4_vectsp_1 X0 X2 X5 \\
& X4) = k6_algstr_0 X0 X5 (k2_binop_1 (u1_struct_0 X1) (u1_struct_0 \\
& X2) (u1_struct_0 X0) X6 X3 X4)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 \\
& X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_vectsp_1 X0) \wedge \\
& (v6_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 \\
& X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge ((v8_vectsp_1 X2 X0) \wedge \\
& (v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 X2 X0) \wedge ((v11_vectsp_1 X2 \\
& X0) \wedge (l1_vectsp_1 X2 X0)))))) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X2)) \Rightarrow ((k4_vectsp_1 X0 X2 (k4_struct_0 X0) X3 = k4_struct_0 \\
& X2) \wedge (k4_vectsp_1 X0 X2 X1 (k4_struct_0 X2) = k4_struct_0 X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0. \exists X1. m1_subset_1 X1 X0 \tag{5}$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(l1_vectsp_1 X1 X0) \Rightarrow (l2_algstr_0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))) \wedge ((m1_subset_1 X4 X0) \wedge (m1_subset_1 X5 X1)))) \Rightarrow (m1_subset_1 (k2_binop_1 X0 X1 X2 X3 X4 X5) X2) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v5_vectsp_1 X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v1_vectsp_1 X0) \wedge (v2_vectsp_1 X0)))) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v3_group_1 X0) \wedge ((v5_vectsp_1 X0) \wedge (v6_vectsp_1 X0) \wedge (l6_algstr_0 X0)))))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v8_vectsp_1 X1 X0) \wedge ((v9_vectsp_1 X1 X0) \wedge ((v10_vectsp_1 X1 X0) \wedge ((v11_vectsp_1 X1 X0) \wedge (l1_vectsp_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\ & ((\neg v2_struct_0 X2) \wedge ((v13_algstr_0 X2) \wedge ((v3_rlvect_1 X2) \wedge ((v4_rlvect_1 X2) \wedge ((v8_vectsp_1 X2 X0) \wedge ((v9_vectsp_1 X2 X0) \wedge ((v10_vectsp_1 X2 X0) \wedge ((v11_vectsp_1 X2 X0) \wedge (l1_vectsp_1 X2 X0)))))))))) \Rightarrow \\ & (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge ((v3_bilinear X3 X0 X1 X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)))))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow (k2_binop_1 (u1_struct_0 X1) (u1_struct_0 X2) (u1_struct_0 X0) X3 X4 (k4_struct_0 X2) = k4_struct_0 X0)))))) \end{aligned}$$