

t7_bilinear

(TMF_{x87fwXoYizkmFWSWTSX2iVEAyUyNkkFD})

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_struct_0 : \iota \Rightarrow \iota$ 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 $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \tag{2}$$

Assume the following.

$$\forall X0. (l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (l5_algstr_0 X0) \Rightarrow ((l4_algstr_0 X0) \wedge (l4_struct_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0. (l4_algstr_0 X0) \Rightarrow ((l3_struct_0 X0) \wedge (l3_algstr_0 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.(l1_vectsp_1 X1 X0) \Rightarrow (l2_algstr_0 X1)) \quad (7)$$

Assume the following.

$$\forall X0.(l1_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(l3_struct_0 X0) \Rightarrow (m1_subset_1 (k5_struct_0 X0) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))) \wedge ((m1_subset_1 X4 X0) \wedge (m1_subset_1 X5 X1)))))) \Rightarrow (m1_subset_1 (k2_binop_1 X0 X1 X2 X3 X4 X5) X2) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l4_algstr_0 X0)) \Rightarrow ((v6_vectsp_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k6_algstr_0 X0 (k5_struct_0 X0) X1 = X1))) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l3_algstr_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (l1_vectsp_1 X2 X0)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)))))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)))))) \Rightarrow ((X5 = k3_bilinear X0 X1 X2 X3 X4) \Leftrightarrow (\forall X6.(m1_subset_1 X6 (u1_struct_0 X1)) \Rightarrow (\forall X7.(m1_subset_1 X7 (u1_struct_0 X2)) \Rightarrow (k2_binop_1 (u1_struct_0 X1) (u1_struct_0 X2) (u1_struct_0 X0) X5 X6 X7 = k6_algstr_0 X0 X4 (k2_binop_1 (u1_struct_0 X1) (u1_struct_0 X2) (u1_struct_0 X0) X3 X6 X7)))))))))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_vectsp_1 X0) \wedge (l6_algstr_0 \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0 X2) \wedge (l1_vectsp_1 X2 X0)) \Rightarrow (\forall X3. \\ & ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X1) \\ & (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) \\ & (u1_struct_0 X0)))))) \Rightarrow (r2_funct_2 (k2_zfmisc_1 (u1_struct_0 \\ & X1) (u1_struct_0 X2)) (u1_struct_0 X0) (k3_bilinear X0 X1 X2 X3 (\\ & k5_struct_0 X0) X3)))) \end{aligned}$$