

t34_hermitan

(TMY6i4FPPHfiPbsfkRSESHga4T64vDvun2C)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_complfld : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ 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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_hermitan : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $k2_bilinear : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v5_group_1 : \iota \Rightarrow o$ be given. Let $v3_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v6_vectsp_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_vectsp_1 X0 k1_complfld)) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 k1_complfld)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)))))) \Rightarrow (r2_funct_2 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld) (k3_hermitan X0 X1 (k4_bilinear k1_complfld X0 X1 X2)) (k4_bilinear k1_complfld X0 X1 (k3_hermitan X0 X1 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_vectsp_1 X0 k1_complfld)) \Rightarrow \\
& (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 k1_complfld)) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) (u1_struct_0 k1_complfld)))))) \Rightarrow (\forall X3.((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)) \\
& (u1_struct_0 k1_complfld)))))) \Rightarrow (r2_funct_2 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld) (k3_hermitan \\
& X0 X1 (k6_bilinear k1_complfld X0 X1 X2 X3) (k6_bilinear k1_complfld \\
& X0 X1 (k3_hermitan X0 X1 X2) (k3_hermitan X0 X1 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_rlvect_1 X0) \wedge (l2_algstr_0 X0))) \wedge (((\neg v2_struct_0 X1) \wedge \\
& (l1_vectsp_1 X1 X0)) \wedge (((\neg v2_struct_0 X2) \wedge (l1_vectsp_1 X2 X0)) \wedge \\
& (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 \\
& X1) (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) \\
& (u1_struct_0 X0)))))) \wedge ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 \\
& (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 \\
& X2)) (u1_struct_0 X0))))))))) \Rightarrow (k6_bilinear X0 X1 X2 X3 X4 = k2_bilinear \\
& X0 X1 X2 X3 X4)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& (\neg v6_struct_0 k1_complfld) \wedge ((v13_algstr_0 k1_complfld) \wedge ((\\
& v33_algstr_0 k1_complfld) \wedge ((v36_algstr_0 k1_complfld) \wedge ((v3_group_1 \\
& k1_complfld) \wedge ((v5_group_1 k1_complfld) \wedge ((v3_vectsp_1 k1_complfld) \wedge \\
& ((v5_vectsp_1 k1_complfld) \wedge ((v6_vectsp_1 k1_complfld) \wedge ((v2_rlvect_1 \\
& k1_complfld) \wedge ((v3_rlvect_1 k1_complfld) \wedge (v4_rlvect_1 k1_complfld))))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$(\neg v2_struct_0 k1_complfld) \wedge (v36_algstr_0 k1_complfld) \tag{6}$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0) \wedge (l2_algstr_0 X0)) \wedge (((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \wedge \\ & (((\neg v2_struct_0 X2) \wedge (l1_vectsp_1 X2 X0)) \wedge ((v1_funct_1 X3) \wedge (\\ & (v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) \\ & (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 \\ & X0)))))) \Rightarrow ((v1_funct_1 (k4_bilinear X0 X1 X2 X3)) \wedge ((v1_funct_2 \\ & (k4_bilinear X0 X1 X2 X3) (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 \\ & X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 (k4_bilinear X0 X1 X2 X3) (\\ & k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 \\ & X2)) (u1_struct_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (l1_vectsp_1 \\ & X0 k1_complfld)) \wedge (((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 k1_complfld)) \wedge \\ & ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X1)) (u1_struct_0 k1_complfld)))))) \Rightarrow ((v1_funct_1 (k3_hermitan \\ & X0 X1 X2)) \wedge ((v1_funct_2 (k3_hermitan X0 X1 X2) (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 \\ & (k3_hermitan X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)))))) \end{aligned} \quad (9)$$

Assume the following.

$$(v36_algstr_0 k1_complfld) \wedge (l6_algstr_0 k1_complfld) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge (l2_algstr_0 X0)) \Rightarrow (\forall X1. \\ & (((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 X0)) \Rightarrow (\forall X2.(((\neg v2_struct_0 \\ & X2) \wedge (l1_vectsp_1 X2 X0)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 \\ & X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X1) (u1_struct_0 X2)) (u1_struct_0 X0)))))) \Rightarrow (\forall X4. \\ & ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 (u1_struct_0 X1) \\ & (u1_struct_0 X2)) (u1_struct_0 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 X2)) \\ & (u1_struct_0 X0)))))) \Rightarrow (k5_bilinear X0 X1 X2 X3 X4 = k2_bilinear \\ & X0 X1 X2 X3 (k4_bilinear X0 X1 X2 X4)))))) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_vectsp_1 X0 k1_complfld)) \Rightarrow \\ & (\forall X1.((\neg v2_struct_0 X1) \wedge (l1_vectsp_1 X1 k1_complfld)) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X1)) (u1_struct_0 k1_complfld)))))) \Rightarrow (\forall X3.((v1_funct_1 \\ & X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X1)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)) \\ & (u1_struct_0 k1_complfld)))))) \Rightarrow (r2_funct_2 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X1)) (u1_struct_0 k1_complfld) (k3_hermitan \\ & X0 X1 (k5_bilinear k1_complfld X0 X1 X2 X3)) (k5_bilinear k1_complfld \\ & X0 X1 (k3_hermitan X0 X1 X2) (k3_hermitan X0 X1 X3)))))) \end{aligned}$$