

t57_hermitan (TM- cBBPud4SrtVyA4vrnxLNzDQdH7hVJPgEM)

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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 $v8_vectsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_complfld : \iota$ 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 $v4_hermitan : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_hermitan : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_complex1 : \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_complex1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_complex1 : \iota \Rightarrow \iota$ be given. Let $k7_complex1 : \iota$ be given. Let $np_0 : \iota$ be given. Let $k1_xcmplx_0 : \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $v36_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$k4_struct_0 \ k1_complfld = k5_complex1 \tag{1}$$

Assume the following.

$$\forall X0.(v1_xboole_0 \ X0) \Rightarrow (X0 = k1_xboole_0) \tag{2}$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 \ X0) \Rightarrow (k2_xcmplx_0 \ (k3_complex1 \ X0) \ (k3_xcmplx_0 \ (k4_complex1 \ X0) \ k7_complex1) = X0) \tag{3}$$

Assume the following.

$$v1_xboole_0 \ np_0 \tag{4}$$

Assume the following.

$$k3_xcmplx_0 \ np_0 \ k1_xcmplx_0 = np_0 \tag{5}$$

Assume the following.

$$k2_xcmplx_0 \ np_0 \ np_0 = np_0 \quad (6)$$

Assume the following.

$$k7_complex1 = k1_xcmplx_0 \quad (7)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (8)$$

Assume the following.

$$k5_complex1 = k1_xboole_0 \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 \ X0) \wedge (l1_struct_0 \ X0)) \Rightarrow (\neg v1_xboole_0 \ (u1_struct_0 \ X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l6_algstr_0 \ X0) \Rightarrow ((l2_algstr_0 \ X0) \wedge (l5_algstr_0 \ X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l2_struct_0 \ X0) \Rightarrow (l1_struct_0 \ X0) \quad (12)$$

Assume the following.

$$\forall X0.(l2_algstr_0 \ X0) \Rightarrow ((l2_struct_0 \ X0) \wedge (l1_algstr_0 \ X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l1_struct_0 \ X0) \Rightarrow (\forall X1.(l1_vectsp_1 \ X1 \ X0) \Rightarrow (l2_algstr_0 \ X1)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 \ X0) \wedge (\neg v1_xboole_0 \ X1) \wedge ((v1_funct_1 \ X3) \wedge ((\\ & v1_funct_2 \ X3 \ (k2_zfmisc_1 \ X0 \ X1) \ X2) \wedge (m1_subset_1 \ X3 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1) \ X2)))))) \wedge ((m1_subset_1 \ X4 \ X0) \wedge \\ & (m1_subset_1 \ X5 \ X1)))) \Rightarrow (m1_subset_1 \ (k2_binop_1 \ X0 \ X1 \ X2 \ X3 \ X4 \\ & \quad X5) \ X2) \end{aligned} \quad (15)$$

Assume the following.

$$(v36_algstr_0 \ k1_complfld) \wedge (l6_algstr_0 \ k1_complfld) \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_vectsp_1 X0 k1_complfld)) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)) (u1_struct_0 k1_complfld)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0)) (u1_struct_0 k1_complfld)))))) \Rightarrow ((v4_hermitan X1 X0) \Leftrightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k4_complex1 (k2_binop_1 (\\
& u1_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 k1_complfld) X1 \\
& X2 X2) = k6_numbers))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (u1_struct_0 k1_complfld)) \Rightarrow (v1_xcmplx_0 X0) \tag{18}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
& X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v8_vectsp_1 X0 k1_complfld) \wedge \\
& ((v9_vectsp_1 X0 k1_complfld) \wedge ((v10_vectsp_1 X0 k1_complfld) \wedge \\
& ((v11_vectsp_1 X0 k1_complfld) \wedge (l1_vectsp_1 X0 k1_complfld)))))))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)) (u1_struct_0 k1_complfld)) \wedge ((v4_hermitan \\
& X1 X0) \wedge ((v5_hermitan X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_struct_0 \\
& k1_complfld)))))))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow ((k3_complex1 (k2_binop_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (u1_struct_0 k1_complfld) X1 X2 X2) = k6_numbers) \Rightarrow (k2_binop_1 \\
& (u1_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 k1_complfld) X1 \\
& X2 X2 = k4_struct_0 k1_complfld))))))
\end{aligned}$$