t41_hermitan (TMQm4w5bEibZZm9fH5pjvLSj6ecXitffRmX)

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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 $v8\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k17\_complex1 : \iota \Rightarrow \iota$ be given. Let $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_complex1 : \iota \Rightarrow \iota$ be given. Let $k4\_hermitan : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $k4\_complex1 : \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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.

$$\forall X0.(m1\_subset\_1\ X0\ (u1\_struct\_0\ k1\_complfld)) \Rightarrow (((r1\_xxreal\_0\ k6\_numbers\ (k3\_complex1\ X0)) \wedge (k4\_complex1\ X0 = k6\_numbers)) \Rightarrow (k17\_complex1\ X0 = k3\_complex1\ X0)) \tag{1}$$

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.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(l1\_vectsp\_1\ X1\ X0)\Rightarrow (l2\_algstr\_0\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. ((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k2\_zfmisc\_1\ X0\ X1)\ X2)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1 (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)\ X2)))))\wedge((m1\_subset\_1\ X4\ X0)\wedge (m1\_subset\_1\ X5\ X1)))))\Rightarrow(m1\_subset\_1\ (k2\_binop\_1\ X0\ X1\ X2\ X3\ X4 X5)\ X2) \tag{7}$$

Assume the following.

$$(v36\_algstr\_0\ k1\_complfld)\wedge(l6\_algstr\_0\ k1\_complfld) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_vectsp\_1\ X0\ k1\_complfld))\Rightarrow (\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ (u1\_struct\_0 X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))\wedge(m1\_subset\_1 X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 X0))\ (u1\_struct\_0\ k1\_complfld))))))\Rightarrow(\forall X2.(m1\_subset\_1 X2\ (u1\_struct\_0\ X0))\Rightarrow(k4\_hermitan\ X0\ X1\ X2 = k3\_complex1\ (k2\_binop\_1 (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld)\ X1 X2\ X2)))) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_vectsp\_1\ X0\ k1\_complfld))\Rightarrow (\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ (u1\_struct\_0 X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))\wedge(m1\_subset\_1 X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0 X0))\ (u1\_struct\_0\ k1\_complfld))))))\Rightarrow((v5\_hermitan\ X1\ X0)\Leftrightarrow(\forall X2. (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(r1\_xxreal\_0\ k6\_numbers\ (k3\_complex1 (k2\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld) X1\ X2\ X2)))))) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_vectsp\_1\ X0\ k1\_complfld))\Rightarrow (\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))))))\Rightarrow((v4\_hermitan\ X1\ X0)\Leftrightarrow(\forall X2.\ (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k4\_complex1\ (k2\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld)\ X1\ X2\ X2) = k6\_numbers))))) \tag{11}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v8\_vectsp\_1\ X0\ k1\_complfld)\wedge((v9\_vectsp\_1\ X0\ k1\_complfld)\wedge((v10\_vectsp\_1\ X0\ k1\_complfld)\wedge((v11\_vectsp\_1\ X0\ k1\_complfld)\wedge(l1\_vectsp\_1\ X0\ k1\_complfld))))))))\Rightarrow(\forall X1.\ ((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))\wedge((v4\_hermitan\ X1\ X0)\wedge((v5\_hermitan\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ k1\_complfld))))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((k17\_complex1\ (k2\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld)\ X1\ X2\ X2) = k3\_complex1\ (k2\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld)\ X1\ X2\ X2))\wedge(k4\_hermitan\ X0\ X1\ X2 = k17\_complex1\ (k2\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k1\_complfld)\ X1\ X2\ X2)))))$$