t36_quatern2 (TMY7kG3e8TrAw1d1J48vgs2MF1bVMRDPUvF)

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Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k15\_quatern2 : \iota$ be given. Let $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v8\_algstr\_0 : \iota \Rightarrow o$ 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 $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $u2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ 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 $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0) \wedge (l1\_algstr\_0\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (k3\_rlvect\_1\ X0\ X1\ X2 = k1\_algstr\_0\ X0\ X1\ X2) \tag{1}$$

Assume the following.

$$(v8\_algstr\_0\ k15\_quatern2) \wedge ((v13\_algstr\_0\ k15\_quatern2) \wedge ((v2\_rlvect\_1\ k15\_quatern2) \wedge ((v3\_rlvect\_1\ k15\_quatern2) \wedge (v4\_rlvect\_1\ k15\_quatern2)))) \tag{2}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (u2\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0) \Rightarrow ((v1\_funct\_1\ (u1\_algstr\_0\ X0)) \wedge ((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ (u1\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{4}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge (m1\_subset\_1\ X3\ X0)))\Rightarrow(m1\_subset\_1\ (k5\_binop\_1\ X0\ X1\ X2\ X3)\ X0) \tag{6}$$

Assume the following.

$$(v8\_algstr\_0\ k15\_quatern2)\wedge(l2\_algstr\_0\ k15\_quatern2) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(k4\_struct\_0\ X0 = u2\_struct\_0\ X0) \tag{8}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((v4\_rlvect\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_0\ X0\ X1\ (k4\_struct\_0\ X0) = X1))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v3\_rlvect\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow (k1\_algstr\_0\ X0\ (k1\_algstr\_0\ X0\ X1\ X2)\ X3 = k1\_algstr\_0\ X0\ X1\ (k1\_algstr\_0\ X0\ X2\ X3)))))) \tag{10}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_0\ X0\ X1\ X2 = k5\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ X1\ X2))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0)\wedge(l1\_algstr\_0\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k3\_rlvect\_1\ X0\ X1\ X2 = k3\_rlvect\_1\ X0\ X2\ X1) \tag{12}$$

Theorem 1

$$\forall X0.(m1\_subset\_1\ X0\ (u1\_struct\_0\ k15\_quatern2))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ k15\_quatern2))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ k15\_quatern2))\Rightarrow((k3\_rlvect\_1\ k15\_quatern2\ X0\ X1 = k3\_rlvect\_1\ k15\_quatern2\ X1\ X0)\wedge((k3\_rlvect\_1\ k15\_quatern2\ (k3\_rlvect\_1\ k15\_quatern2\ X0\ X1)\ X2 = k3\_rlvect\_1\ k15\_quatern2\ X0\ (k3\_rlvect\_1\ k15\_quatern2\ X1\ X2))\wedge(k3\_rlvect\_1\ k15\_quatern2\ X0\ (k4\_struct\_0\ k15\_quatern2) = X0)))))$$