

t56\_matrix\_8  
(TMUAdoWJr1MjTer3kjsx9fn7pHtEaaHPsmZx)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  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  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_finsop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\
 & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 \\
 & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\
 & X0)) \Rightarrow ((k1\_algstr\_0 X0 X1 X2 = k4\_struct\_0 X0) \Rightarrow (X1 = k4\_algstr\_0 \\
 & X0 X2))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\ ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge \\ (v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1 \\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge \\ (l6\_algstr\_0\ X1)))))))))) \Rightarrow (k1\_matrix\_8\ X0\ X1\ (k11\_matrix\_1 \\ X1\ X0) = k4\_struct\_0\ X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\ ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge \\ (v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1 \\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge \\ (l6\_algstr\_0\ X1)))))))))) \Rightarrow (\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\ X1)\ X0\ X0) \Rightarrow (\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0) \Rightarrow \\ (k1\_matrix\_8\ X0\ X1\ (k2\_matrix\_6\ X0\ X1\ X2\ X3) = k3\_rlvect\_1\ X1\ (k1\_matrix\_8 \\ X0\ X1\ X2)\ (k1\_matrix\_8\ X0\ X1\ X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v6\_struct\_0\ X0) \wedge ((v13\_algstr\_0 \\ X0) \wedge ((v33\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v5\_group\_1\ X0) \wedge \\ (v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v4\_vectsp\_1 \\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0)))))))))) \Rightarrow (\forall X1. \\ ((v1\_matrix\_1\ X1) \wedge (m2\_finseq\_1\ X1\ (k3\_finseq\_2\ (u1\_struct\_0 \\ X0)))) \Rightarrow (k3\_matrix\_3\ X0\ X1\ (k2\_matrix\_3\ X0\ X1) = k1\_matrix\_3\ X0\ ( \\ k3\_finseq\_1\ X1)\ (k1\_matrix\_1\ X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow ( \\ \forall X2.(m1\_matrix\_1\ X2\ X1\ X0\ X0) \Rightarrow ((k3\_finseq\_1\ X2 = X0) \wedge ((k1\_matrix\_1 \\ X2 = X0) \wedge (k2\_matrix\_1\ X2 = k2\_zfmisc\_1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1 \\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0) \wedge (l1\_algstr\_0 \\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0 \\ X0)))) \Rightarrow (k3\_rlvect\_1\ X0\ X1\ X2 = k1\_algstr\_0\ X0\ X1\ X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1\ X0)\wedge \\ & (((\neg v2\_struct\_0\ X1)\wedge(\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge \\ & ((v33\_algstr\_0\ X1)\wedge(v3\_group\_1\ X1)\wedge(v5\_group\_1\ X1)\wedge(v2\_rlvect\_1 \\ & X1)\wedge(v3\_rlvect\_1\ X1)\wedge(v4\_rlvect\_1\ X1)\wedge(v4\_vectsp\_1\ X1)\wedge \\ & ((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))\wedge((m1\_matrix\_1 \\ & X2\ (u1\_struct\_0\ X1)\ X0\ X0)\wedge(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)))\Rightarrow \\ & (k2\_matrix\_6\ X0\ X1\ X2\ X3 = k3\_matrix\_3\ X1\ X2\ X3) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge(((\neg v2\_struct\_0 \\ & X1)\wedge(\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge \\ & ((v3\_group\_1\ X1)\wedge(v5\_group\_1\ X1)\wedge(v2\_rlvect\_1\ X1)\wedge(v3\_rlvect\_1 \\ & X1)\wedge(v4\_rlvect\_1\ X1)\wedge(v4\_vectsp\_1\ X1)\wedge(v5\_vectsp\_1\ X1)\wedge \\ & (l6\_algstr\_0\ X1))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1) \\ & X0\ X0))\Rightarrow(k1\_matrix\_6\ X0\ X1\ X2 = k2\_matrix\_3\ X1\ X2) \end{aligned} \quad (9)$$

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.

$$\begin{aligned} & \forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v1\_funct\_1\ (u1\_algstr\_0\ X0))\wedge \\ & ((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ ( \\ & u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u1\_algstr\_0 \\ & X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ ( \\ & u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((v7\_ordinal1 \\ & X1)\wedge(v7\_ordinal1\ X2)))\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ X0\ X1\ X2)\Rightarrow \\ & ((v1\_matrix\_1\ X3)\wedge(m2\_finseq\_1\ X3\ (k3\_finseq\_2\ X0)))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0)\Rightarrow((l2\_algstr\_0\ X0)\wedge(l5\_algstr\_0\ X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \quad (14)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((\neg v2\_struct\_0 \\ & X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge \\ & ((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\ & X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\ & (l6\_algstr\_0\ X1))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1) \\ & X0\ X0))\Rightarrow(m1\_subset\_1\ (k1\_matrix\_8\ X0\ X1\ X2)\ (u1\_struct\_0\ X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((\neg v2\_struct\_0 \\ & X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge \\ & ((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\ & X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\ & (l6\_algstr\_0\ X1))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1) \\ & X0\ X0))\Rightarrow(m1\_matrix\_1\ (k1\_matrix\_6\ X0\ X1\ X2)\ (u1\_struct\_0\ X1)\ X0 \\ & X0) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((m1\_finseq\_1 \\ & X1\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge \\ & (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0) \\ & X0))))))\Rightarrow(m1\_subset\_1\ (k1\_finsop\_1\ X0\ X1\ X2)\ X0) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((\neg v2\_struct\_0 \\ & X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge \\ & ((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\ & X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\ & (l6\_algstr\_0\ X1))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1) \\ & X0\ X0))\Rightarrow(m2\_finseq\_1\ (k13\_matrix\_3\ X0\ X1\ X2)\ (u1\_struct\_0\ X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1 \\ & X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l2\_algstr\_0\ X0))))))\Rightarrow \\ & (\forall X1.(m2\_finseq\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k4\_rlvect\_1\ X0 \\ & X1 = k1\_finsop\_1\ (u1\_struct\_0\ X0)\ X1\ (u1\_algstr\_0\ X0)) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\ ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge \\ (v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1 \\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge \\ (l6\_algstr\_0\ X1)))))))))) \Rightarrow (\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\ X1)\ X0\ X0) \Rightarrow (k1\_matrix\_8\ X0\ X1\ X2 = k4\_rlvect\_1\ X1\ (k13\_matrix\_3\ X0 \\ X1\ X2)))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v6\_struct\_0\ X0) \wedge ((v13\_algstr\_0 \\ X0) \wedge ((v33\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v5\_group\_1\ X0) \wedge \\ (v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v4\_vectsp\_1 \\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0)))))))))) \Rightarrow (\forall X1. \\ (v7\_ordinal1\ X1) \Rightarrow (\forall X2.(v7\_ordinal1\ X2) \Rightarrow (k1\_matrix\_3 \\ X0\ X1\ X2 = k5\_finseq\_2\ (k4\_finseq\_2\ X2\ (u1\_struct\_0\ X0))\ X1\ (k5\_finseq\_2 \\ (u1\_struct\_0\ X0)\ X2\ (k4\_struct\_0\ X0)))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge (l6\_algstr\_0\ X0)) \Rightarrow (\forall X1. \\ (v7\_ordinal1\ X1) \Rightarrow (k11\_matrix\_1\ X0\ X1 = k5\_finseq\_2\ (k4\_finseq\_2 \\ X1\ (u1\_struct\_0\ X0))\ X1\ (k5\_finseq\_2\ (u1\_struct\_0\ X0)\ X1\ (k4\_struct\_0 \\ X0)))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0) \wedge (l1\_algstr\_0 \\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0 \\ X0)))) \Rightarrow (k3\_rlvect\_1\ X0\ X1\ X2 = k3\_rlvect\_1\ X0\ X2\ X1) \end{aligned} \quad (24)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\ ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge \\ (v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1 \\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge \\ (l6\_algstr\_0\ X1)))))))))) \Rightarrow (\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\ X1)\ X0\ X0) \Rightarrow (k1\_matrix\_8\ X0\ X1\ (k1\_matrix\_6\ X0\ X1\ X2) = k4\_algstr\_0 \\ X1\ (k1\_matrix\_8\ X0\ X1\ X2)))) \end{aligned}$$