

# t51\_matrix\_8 (TMbRMUSNwMr- BaM6mopyRQR8M2DF6GFddNaY)

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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  $v4\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_matrix\_8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & ((\neg v6\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v33\_algstr\_0 X1) \wedge \\ & (v3\_group\_1 X1) \wedge (v5\_group\_1 X1) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 \\ & X1) \wedge (v4\_rlvect\_1 X1) \wedge (v4\_vectsp\_1 X1) \wedge (v5\_vectsp\_1 X1) \wedge \\ & (l6\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 \\ & X1) X0 X0) \Rightarrow (((k4\_matrix\_6 X0 X1 X2 (k5\_matrix\_1 X0 (u1\_struct\_0 \\ & X1) X2) = k12\_matrix\_1 X1 X0) \wedge (v1\_matrix\_6 X2 X0 X1)) \Leftrightarrow (v4\_matrix\_6 \\ & X2 X0 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & ((\neg v6\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v33\_algstr\_0 X1) \wedge \\ & (v3\_group\_1 X1) \wedge (v5\_group\_1 X1) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 \\ & X1) \wedge (v4\_rlvect\_1 X1) \wedge (v4\_vectsp\_1 X1) \wedge (v5\_vectsp\_1 X1) \wedge \\ & (l6\_algstr\_0 X1)))))) \Rightarrow (\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 \\ & X1) X0 X0) \Rightarrow (m1\_matrix\_1 (k5\_matrix\_1 X0 (u1\_struct\_0 X1) X2) (u1\_struct\_0 \\ & X1) X0 X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1\ X0)\wedge \\
& (((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge \\
& ((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1 \\
& X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge \\
& ((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))\wedge((m1\_matrix\_1 \\
& X2\ (u1\_struct\_0\ X1)\ X0\ X0)\wedge(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)))\Rightarrow \\
& (m1\_matrix\_1\ (k4\_matrix\_6\ X0\ X1\ X2\ X3)\ (u1\_struct\_0\ X1)\ X0\ X0)
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge \\
& ((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge( \\
& (v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\
& X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\
& (l6\_algstr\_0\ X1))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\
& X1)\ X0\ X0)\Rightarrow((v4\_matrix\_6\ X2\ X0\ X1)\Leftrightarrow((v1\_matrix\_6\ X2\ X0\ X1)\wedge(k5\_matrix\_1 \\
& X0\ (u1\_struct\_0\ X1)\ X2 = k5\_matrix\_6\ X0\ X1\ X2))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge \\
& ((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge( \\
& (v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\
& X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\
& (l6\_algstr\_0\ X1))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\
& X1)\ X0\ X0)\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow \\
& ((r1\_matrix\_8\ X0\ X1\ X2\ X3)\Leftrightarrow(\exists X4.(m1\_matrix\_1\ X4\ (u1\_struct\_0 \\
& X1)\ X0\ X0)\wedge((v1\_matrix\_6\ X4\ X0\ X1)\wedge(X2 = k4\_matrix\_6\ X0\ X1\ (k4\_matrix\_6 \\
& X0\ X1\ (k5\_matrix\_6\ X0\ X1\ X4)\ X3)\ X4))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge \\
& ((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge( \\
& (v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1 \\
& X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge \\
& (l6\_algstr\_0\ X1))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0 \\
& X1)\ X0\ X0)\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow \\
& ((v4\_matrix\_6\ X2\ X0\ X1)\Rightarrow(r1\_matrix\_8\ X0\ X1\ (k4\_matrix\_6\ X0\ X1\ (k4\_matrix\_6 \\
& X0\ X1\ (k5\_matrix\_1\ X0\ (u1\_struct\_0\ X1)\ X2)\ X3)\ X2)\ X3))))
\end{aligned}$$