

## t5\_matrix\_6

(TMVRMrXfnWzJr9x3yf8ECcAN4Wjwhj2qCe9)

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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  $r1\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $l1\_struct\_0 : \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
 & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
 & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
 & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
 & X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
 & (u1\_struct\_0 X0)))) \Rightarrow (\forall X3.((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\
 & X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X2 = k3\_finseq\_1 \\
 & X3) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X3) \wedge (k3\_finseq\_1 X1 = k1\_matrix\_1 \\
 & X2))) \Rightarrow ((r1\_xxreal\_0 (k3\_finseq\_1 X2) k6\_numbers) \vee ((r1\_xxreal\_0 \\
 & (k3\_finseq\_1 X1) k6\_numbers) \vee (k4\_matrix\_3 X0 (k3\_matrix\_3 X0 \\
 & X2 X3) X1 = k3\_matrix\_3 X0 (k4\_matrix\_3 X0 X2 X1) (k4\_matrix\_3 X0 X3 \\
 & X1)))))))))
 \end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\
& (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 \\
& (u1\_struct\_0 X0)))) \Rightarrow (\forall X3.((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 \\
& X3 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow (((k3\_finseq\_1 X2 = k3\_finseq\_1 \\
& X3) \wedge ((k1\_matrix\_1 X2 = k1\_matrix\_1 X3) \wedge (k1\_matrix\_1 X1 = k3\_finseq\_1 \\
& X2))) \Rightarrow ((r1\_xxreal\_0 (k3\_finseq\_1 X1) k6\_numbers) \vee ((r1\_xxreal\_0 \\
& (k3\_finseq\_1 X2) k6\_numbers) \vee (k4\_matrix\_3 X0 X1 (k3\_matrix\_3 \\
& X0 X2 X3) = k3\_matrix\_3 X0 (k4\_matrix\_3 X0 X1 X2) (k4\_matrix\_3 X0 X1 \\
& X3)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow ( \\
& \forall X2.(m1\_matrix\_1 X2 X1 X0 X0) \Rightarrow ((k3\_finseq\_1 X2 = X0) \wedge ((k1\_matrix\_1 \\
& X2 = X0) \wedge (k2\_matrix\_1 X2 = k2\_zfmisc\_1 (k2\_finseq\_1 X0) (k2\_finseq\_1 \\
& X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1 X0) \wedge \\
& (((\neg v2\_struct\_0 X1) \wedge ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\
& ((v33\_algstr\_0 X1) \wedge ((v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge \\
& ((v5\_vectsp\_1 X1) \wedge (l6\_algstr\_0 X1)))))))))) \wedge ((m1\_matrix\_1 \\
& X2 (u1\_struct\_0 X1) X0 X0) \wedge (m1\_matrix\_1 X3 (u1\_struct\_0 X1) X0 X0))) \Rightarrow \\
& ((r1\_matrix\_6 X0 X1 X2 X3) \Rightarrow (r1\_matrix\_6 X0 X1 X3 X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1 X0) \wedge \\
& (((\neg v2\_struct\_0 X1) \wedge ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\
& ((v33\_algstr\_0 X1) \wedge ((v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge \\
& ((v5\_vectsp\_1 X1) \wedge (l6\_algstr\_0 X1)))))))))) \wedge ((m1\_matrix\_1 \\
& X2 (u1\_struct\_0 X1) X0 X0) \wedge (m1\_matrix\_1 X3 (u1\_struct\_0 X1) X0 X0))) \Rightarrow \\
& (k2\_matrix\_6 X0 X1 X2 X3 = k3\_matrix\_3 X1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 \\
& (u1\_struct\_0 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(v7\_ordinal1 X1)\wedge(v7\_ordinal1 X2))\Rightarrow(\forall X3.(m1\_matrix\_1 X3 X0 X1 X2)\Rightarrow((v1\_matrix\_1 X3)\wedge(m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_algstr\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1 X0)\wedge \\ & (((\neg v2\_struct\_0 X1)\wedge(\neg v6\_struct\_0 X1)\wedge(v13\_algstr\_0 X1)\wedge \\ & ((v33\_algstr\_0 X1)\wedge(v3\_group\_1 X1)\wedge(v5\_group\_1 X1)\wedge(v2\_rlvect\_1 \\ & X1)\wedge(v3\_rlvect\_1 X1)\wedge(v4\_rlvect\_1 X1)\wedge(v4\_vectsp\_1 X1)\wedge \\ & ((v5\_vectsp\_1 X1)\wedge(l6\_algstr\_0 X1))))))\wedge((m1\_matrix\_1 \\ & X2 (u1\_struct\_0 X1) X0 X0)\wedge(m1\_matrix\_1 X3 (u1\_struct\_0 X1) X0 X0)))\Rightarrow \\ & (m1\_matrix\_1 (k2\_matrix\_6 X0 X1 X2 X3) (u1\_struct\_0 X1) X0 X0) \quad (11) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge \\ & ((\neg v6\_struct\_0 X1)\wedge(v13\_algstr\_0 X1)\wedge(v33\_algstr\_0 X1)\wedge \\ & (v3\_group\_1 X1)\wedge(v5\_group\_1 X1)\wedge(v2\_rlvect\_1 X1)\wedge(v3\_rlvect\_1 \\ & X1)\wedge(v4\_rlvect\_1 X1)\wedge(v4\_vectsp\_1 X1)\wedge(v5\_vectsp\_1 X1)\wedge \\ & (l6\_algstr\_0 X1))))))\Rightarrow(\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 \\ & X1) X0 X0)\Rightarrow(\forall X3.(m1\_matrix\_1 X3 (u1\_struct\_0 X1) X0 X0)\Rightarrow \\ & ((r1\_matrix\_6 X0 X1 X2 X3)\Leftrightarrow(k4\_matrix\_3 X1 X2 X3 = k4\_matrix\_3 X1 \\ & X3 X2)))) \quad (12) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge \\ & ((\neg v6\_struct\_0 X1)\wedge(v13\_algstr\_0 X1)\wedge(v33\_algstr\_0 X1)\wedge \\ & (v3\_group\_1 X1)\wedge(v5\_group\_1 X1)\wedge(v2\_rlvect\_1 X1)\wedge(v3\_rlvect\_1 \\ & X1)\wedge(v4\_rlvect\_1 X1)\wedge(v4\_vectsp\_1 X1)\wedge(v5\_vectsp\_1 X1)\wedge \\ & (l6\_algstr\_0 X1))))))\Rightarrow(\forall X2.(m1\_matrix\_1 X2 (u1\_struct\_0 \\ & X1) X0 X0)\Rightarrow(\forall X3.(m1\_matrix\_1 X3 (u1\_struct\_0 X1) X0 X0)\Rightarrow \\ & (\forall X4.(m1\_matrix\_1 X4 (u1\_struct\_0 X1) X0 X0)\Rightarrow(((r1\_matrix\_6 \\ & X0 X1 X2 X3)\wedge(r1\_matrix\_6 X0 X1 X2 X4))\Rightarrow((r1\_xxreal\_0 X0 k6\_numbers)\vee \\ & (r1\_matrix\_6 X0 X1 X2 (k2\_matrix\_6 X0 X1 X3 X4)))))) \end{aligned}$$