

# t4\_matrixc1

(TMFcAxwH64caSF2jAFnuFFFWgFev6drtYex)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  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  $k2\_numbers : \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_matrix\_5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_complfld : \iota$  be given. Let  $k1\_matrix\_5 : \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_5 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k8\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  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  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k6\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k27\_binop\_2 : \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k29\_binop\_2 : \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_complex1 : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Assume the following.

$$\forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 (u1\_struct\_0 k1\_complfld)))) \Rightarrow (X0 = k1\_matrix\_5 (k2\_matrix\_5 X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v5\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k8\_group\_1 X0 X1 X2 = k6\_algstr\_0 X0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_xcmplx\_0 X0)\wedge((v1\_xcmplx\_0 X1)\wedge((m1\_subset\_1 X2 (u1\_struct\_0 k1\_complfld))\wedge(m1\_subset\_1 X3 (u1\_struct\_0 k1\_complfld))))))\Rightarrow(((X2 = X0)\wedge(X3 = X1))\Rightarrow(k6\_algstr\_0 k1\_complfld X2 X3 = k5\_binop\_2 X0 X1)) \quad (5)$$

Assume the following.

$$(\neg v6\_struct\_0 k1\_complfld)\wedge((v13\_algstr\_0 k1\_complfld)\wedge((v33\_algstr\_0 k1\_complfld)\wedge((v36\_algstr\_0 k1\_complfld)\wedge((v3\_group\_1 k1\_complfld)\wedge((v5\_group\_1 k1\_complfld)\wedge((v3\_vectsp\_1 k1\_complfld)\wedge((v5\_vectsp\_1 k1\_complfld)\wedge((v6\_vectsp\_1 k1\_complfld)\wedge((v2\_rlvect\_1 k1\_complfld)\wedge((v3\_rlvect\_1 k1\_complfld)\wedge(v4\_rlvect\_1 k1\_complfld)))))))))))) \quad (6)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld)\wedge(v4\_vectsp\_1 k1\_complfld) \quad (7)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_complfld)\wedge(v36\_algstr\_0 k1\_complfld) \quad (8)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0)\Rightarrow((l4\_algstr\_0 X0)\wedge(l4\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0)\Rightarrow((l3\_struct\_0 X0)\wedge(l3\_algstr\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge((v1\_matrix\_1 X1)\wedge(m1\_finseq\_1 X1 (k3\_finseq\_2 k2\_numbers))))\Rightarrow((v1\_matrix\_1 (k7\_matrix\_5 X0 X1))\wedge(m2\_finseq\_1 (k7\_matrix\_5 X0 X1) (k3\_finseq\_2 k2\_numbers))) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 \\ & X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge \\ & ((v5\_group\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\ & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\ & (((v1\_matrix\_1 X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow ((v1\_matrix\_1 (k6\_matrix\_3 \\ & X0 X1 X2) \wedge (m2\_finseq\_1 (k6\_matrix\_3 X0 X1 X2) (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_matrix\_1 X1) \wedge \\ & (m1\_finseq\_1 X1 (k3\_finseq\_2 X0))) \wedge ((v7\_ordinal1 X2) \wedge (v7\_ordinal1 \\ & X3))) \Rightarrow (m1\_subset\_1 (k3\_matrix\_1 X0 X1 X2 X3) X0) \end{aligned} \quad (14)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (l6\_algstr\_0 k1\_complfld) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (\forall X1. ((v1\_matrix\_1 X1) \wedge ( \\ & m2\_finseq\_1 X1 (k3\_finseq\_2 k2\_numbers))) \Rightarrow (\forall X2. ((v1\_matrix\_1 \\ & X2) \wedge (m2\_finseq\_1 X2 (k3\_finseq\_2 k2\_numbers))) \Rightarrow ((X2 = k7\_matrix\_5 \\ & X0 X1) \Leftrightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 k1\_complfld) \Rightarrow \\ & ((X3 = X0) \Rightarrow (X2 = k2\_matrix\_5 (k6\_matrix\_3 k1\_complfld (k1\_matrix\_5 \\ & X1) X3))))))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ( \\ & (v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 (u1\_struct\_0 \\ & X0)))) \Rightarrow ((X3 = k6\_matrix\_3 X0 X1 X2) \Leftrightarrow ((k3\_finseq\_1 X3 = k3\_finseq\_1 \\ & X1) \wedge ((k1\_matrix\_1 X3 = k1\_matrix\_1 X1) \wedge (\forall X4. (v7\_ordinal1 \\ & X4) \Rightarrow (\forall X5. (v7\_ordinal1 X5) \Rightarrow ((k4\_tarski X4 X5 \in k2\_matrix\_1 \\ & X1) \Rightarrow (k3\_matrix\_1 (u1\_struct\_0 X0) X3 X4 X5 = k8\_group\_1 X0 X2 (k3\_matrix\_1 \\ & (u1\_struct\_0 X0) X1 X4 X5))))))))))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Leftrightarrow (X0 \in k2\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k2\_numbers))) \Rightarrow (k1\_matrix\_5 X0 = X0) \quad (19)$$

Assume the following.

$$\forall X0.((v36\_algstr\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow ((X0 = k1\_complfld) \Leftrightarrow ((u1\_struct\_0 X0 = k2\_numbers) \wedge ((u1\_algstr\_0 X0 = k27\_binop\_2) \wedge (u2\_algstr\_0 X0 = k29\_binop\_2) \wedge ((k5\_struct\_0 X0 = k6\_complex1) \wedge (k4\_struct\_0 X0 = k5\_complex1)))))) \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k2\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (21)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2.(v1\_xcmplx\_0 X2) \Rightarrow (\forall X3.((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 k2\_numbers)))) \Rightarrow ((k4\_tarski X0 X1 \in k2\_matrix\_1 X3) \Rightarrow (k3\_matrix\_1 k2\_numbers (k7\_matrix\_5 X2 X3) X0 X1 = k5\_binop\_2 X2 (k3\_matrix\_1 k2\_numbers X3 X0 X1))))))$$