t12_matrix12 (TMbT8cb1c3i6A2CvUpeY3LHCEQJfdVT7P63)

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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 $k4\_finseq\_1 : \iota \Rightarrow \iota$ 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 $k1\_matrix12 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k4\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_matrix\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2.(v7\_ordinal1\ X2) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge ((\neg v6\_struct\_0\ X3) \wedge ((v13\_algstr\_0\ X3) \wedge ((v33\_algstr\_0\ X3) \wedge ((v3\_group\_1\ X3) \wedge ((v5\_group\_1\ X3) \wedge ((v2\_rlvect\_1\ X3) \wedge ((v3\_rlvect\_1\ X3) \wedge ((v4\_rlvect\_1\ X3) \wedge ((v4\_vectsp\_1\ X3) \wedge ((v5\_vectsp\_1\ X3) \wedge (l6\_algstr\_0\ X3))))))))))) \Rightarrow (\forall X4.(m1\_matrix\_1\ X4\ (u1\_struct\_0\ X3)\ X1\ X1) \Rightarrow (((X0 \in k4\_finseq\_1\ (k12\_matrix\_1\ X3\ X1)) \wedge (X2 \in k4\_finseq\_1\ (k12\_matrix\_1\ X3\ X1))) \Rightarrow (k4\_matrix\_6\ X1\ X3\ (k1\_matrix12\ X1\ X1\ X3\ (k12\_matrix\_1\ X3\ X1)\ X0\ X2)\ X4 = k1\_matrix12\ X1\ X1\ X3\ X4\ X0\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2.(v7\_ordinal1\ X2) \Rightarrow (\forall X3.(v7\_ordinal1\ X3) \Rightarrow (\forall X4.((\neg v2\_struct\_0\ X4) \wedge ((\neg v6\_struct\_0\ X4) \wedge ((v13\_algstr\_0\ X4) \wedge ((v33\_algstr\_0\ X4) \wedge ((v3\_group\_1\ X4) \wedge ((v5\_group\_1\ X4) \wedge ((v2\_rlvect\_1\ X4) \wedge ((v3\_rlvect\_1\ X4) \wedge ((v4\_rlvect\_1\ X4) \wedge ((v4\_vectsp\_1\ X4) \wedge ((v5\_vectsp\_1\ X4) \wedge (l6\_algstr\_0\ X4))))))))))) \Rightarrow (\forall X5.(m1\_matrix\_1\ X5\ (u1\_struct\_0\ X4)\ X0\ X1) \Rightarrow (((X2 \in k4\_finseq\_1\ X5) \wedge (X3 \in k4\_finseq\_1\ X5)) \Rightarrow (k1\_matrix12\ X0\ X1\ X4\ (k1\_matrix12\ X0\ X1\ X4\ X5\ X2\ X3)\ X2\ X3 = X5))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1\ X0)\wedge (((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge ((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge ((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\wedge((m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\wedge(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0))))\Rightarrow (k4\_matrix\_6\ X0\ X1\ X2\ X3 = k4\_matrix\_3\ X1\ X2\ X3) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1\ X0)\wedge (((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge ((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge ((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\wedge((m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\wedge(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0))))\Rightarrow (m1\_matrix\_1\ (k4\_matrix\_6\ X0\ X1\ X2\ X3)\ (u1\_struct\_0\ X1)\ X0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ ((v7\_ordinal1\ X0)\wedge((v7\_ordinal1\ X1)\wedge(((\neg v2\_struct\_0\ X2)\wedge((\neg v6\_struct\_0\ X2)\wedge((v13\_algstr\_0\ X2)\wedge((v33\_algstr\_0\ X2)\wedge((v3\_group\_1\ X2)\wedge((v5\_group\_1\ X2)\wedge((v2\_rlvect\_1\ X2)\wedge((v3\_rlvect\_1\ X2)\wedge((v4\_rlvect\_1\ X2)\wedge((v4\_vectsp\_1\ X2)\wedge((v5\_vectsp\_1\ X2)\wedge(l6\_algstr\_0\ X2))))))))))))\wedge((m1\_matrix\_1\ X3\ (u1\_struct\_0\ X2)\ X0\ X1)\wedge((v7\_ordinal1\ X4)\wedge(v7\_ordinal1\ X5))))))\Rightarrow(m1\_matrix\_1\ (k1\_matrix12\ X0\ X1\ X2\ X3\ X4\ X5)\ (u1\_struct\_0\ X2)\ X0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge(l6\_algstr\_0\ X0))\wedge (v7\_ordinal1\ X1))\Rightarrow(m1\_matrix\_1\ (k12\_matrix\_1\ X0\ X1)\ (u1\_struct\_0\ X0)\ X1\ X1) \tag{6}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((v1\_matrix\_6\ X2\ X0\ X1)\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((X3 = k5\_matrix\_6\ X0\ X1\ X2)\Leftrightarrow(r2\_matrix\_6\ X0\ X1\ X3\ X2)))))) \tag{7}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((v1\_matrix\_6\ X2\ X0\ X1)\Leftrightarrow(\exists X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\wedge(r2\_matrix\_6\ X0\ X1\ X2\ X3)))))) \tag{8}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((r2\_matrix\_6\ X0\ X1\ X2\ X3)\Leftrightarrow((k4\_matrix\_3\ X1\ X2\ X3 = k4\_matrix\_3\ X1\ X3\ X2)\wedge(k4\_matrix\_3\ X1\ X2\ X3 = k12\_matrix\_1\ X1\ X1\ X0)))))) \tag{9}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(\forall X2.(v7\_ordinal1\ X2)\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((\neg v6\_struct\_0\ X3)\wedge((v13\_algstr\_0\ X3)\wedge((v33\_algstr\_0\ X3)\wedge((v3\_group\_1\ X3)\wedge((v5\_group\_1\ X3)\wedge((v2\_rlvect\_1\ X3)\wedge((v3\_rlvect\_1\ X3)\wedge((v4\_rlvect\_1\ X3)\wedge((v4\_vectsp\_1\ X3)\wedge((v5\_vectsp\_1\ X3)\wedge(l6\_algstr\_0\ X3))))))))))))\Rightarrow(((X0 \in k4\_finseq\_1\ (k12\_matrix\_1\ X3\ X1))\wedge(X2 \in k4\_finseq\_1\ (k12\_matrix\_1\ X3\ X1)))\Rightarrow((v1\_matrix\_6\ (k1\_matrix12\ X1\ X1\ X3\ (k12\_matrix\_1\ X3\ X1)\ X0\ X2)\ X1\ X3)\wedge(k5\_matrix\_6\ X1\ X3\ (k1\_matrix12\ X1\ X1\ X3\ (k12\_matrix\_1\ X3\ X1)\ X0\ X2) = k1\_matrix12\ X1\ X1\ X3\ (k12\_matrix\_1\ X3\ X1)\ X0\ X2))))))$$