# l72_matrix_9 (TMFJXcp8rkQD2zVEiaBmfBHatRSena1CSbj)

October 27, 2020

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 $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k2\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k7\_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_matrix\_2 : \iota \Rightarrow \iota$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $k15\_matrix\_2 : \iota \Rightarrow \iota$ be given. Let $k1\_matrix\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ 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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_finsop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_matrix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge (l6\_algstr\_0\ X1))))))))))) \Rightarrow (\forall X2.(m1\_matrix\_2\ X2\ (k12\_matrix\_2\ X0)) \Rightarrow (\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0) \Rightarrow ((\exists X4.(m1\_subset\_1\ X4\ k5\_numbers) \wedge ((X4 \in k2\_finseq\_1\ X0) \wedge (\forall X5.(m1\_subset\_1\ X5\ k5\_numbers) \Rightarrow ((X5 \in k2\_finseq\_1\ X0) \Rightarrow (k1\_funct\_1\ (k9\_matrix\_1\ (u1\_struct\_0\ X1)\ X3\ X4)\ X5 = k4\_struct\_0\ X1))))) \Rightarrow (k3\_funct\_2\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1)\ (k1\_matrix\_9\ X0\ X1\ X3)\ X2 = k4\_struct\_0\ X1)))))) \tag{1}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((\exists X3.(m1\_subset\_1\ X3\ k5\_numbers)\wedge((X3\in k2\_finseq\_1\ X0)\wedge(\forall X4.(m1\_subset\_1\ X4\ k5\_numbers)\Rightarrow((X4\in k2\_finseq\_1\ X0)\Rightarrow(k1\_funct\_1\ (k9\_matrix\_1\ (u1\_struct\_0\ X1)\ X2\ X3)\ X4 = k4\_struct\_0\ X1)))))\Rightarrow(k7\_setwiseo\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1)\ (u1\_algstr\_0\ X1)\ (k15\_matrix\_2\ (k12\_matrix\_2\ X0))\ (k11\_matrix\_3\ X0\ X1\ X2) = k4\_struct\_0\ X1))))$$

(2)

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\Rightarrow(\forall X2.(m1\_matrix\_2\ X2\ (k12\_matrix\_2\ X0))\Rightarrow(\forall X3.(m1\_matrix\_1\ X3\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((\exists X4.(m1\_subset\_1\ X4\ k5\_numbers)\wedge((X4\in k2\_finseq\_1\ X0)\wedge(\forall X5.(m1\_subset\_1\ X5\ k5\_numbers)\Rightarrow((X5\in k2\_finseq\_1\ X0)\Rightarrow(k1\_funct\_1\ (k9\_matrix\_1\ (u1\_struct\_0\ X1)\ X3\ X4)\ X5 = k4\_struct\_0\ X1)))))\Rightarrow(k3\_funct\_2\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1)\ (k11\_matrix\_3\ X0\ X1\ X3)\ X2 = k4\_struct\_0\ X1)))))$$

(3)

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge(((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)))\Rightarrow((v1\_funct\_1\ (k1\_matrix\_9\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k1\_matrix\_9\ X0\ X1\ X2)\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ (k1\_matrix\_9\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))))))$$

(4)

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge(((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))))\wedge(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)))\Rightarrow((v1\_funct\_1\ (k11\_matrix\_3\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k11\_matrix\_3\ X0\ X1\ X2)\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ (k11\_matrix\_3\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))))))) \tag{5}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow((X3 = k1\_matrix\_9\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(m1\_matrix\_2\ X4\ (k12\_matrix\_2\ X0))\Rightarrow(k3\_funct\_2\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1)\ X3\ X4 = k1\_finsop\_1\ (u1\_struct\_0\ X1)\ (k10\_matrix\_3\ X0\ X1\ X2\ X4)\ (u2\_algstr\_0\ X1))))))) \tag{6}$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v6\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v33\_algstr\_0\ X1)\wedge((v3\_group\_1\ X1)\wedge((v5\_group\_1\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1))))))))))\Rightarrow(\forall X2.(m1\_matrix\_1\ X2\ (u1\_struct\_0\ X1)\ X0\ X0)\Rightarrow((\exists X3.(m1\_subset\_1\ X3\ k5\_numbers)\wedge((X3 \in k2\_finseq\_1\ X0)\wedge(\forall X4.(m1\_subset\_1\ X4\ k5\_numbers)\Rightarrow((X4 \in k2\_finseq\_1\ X0)\Rightarrow(k1\_funct\_1\ (k9\_matrix\_1\ (u1\_struct\_0\ X1)\ X2\ X3)\ X4 = k4\_struct\_0\ X1)))))\Rightarrow(k7\_setwiseo\ (k12\_matrix\_2\ X0)\ (u1\_struct\_0\ X1)\ (u1\_algstr\_0\ X1)\ (k15\_matrix\_2\ (k12\_matrix\_2\ X0))\ (k1\_matrix\_9\ X0\ X1\ X2) = k4\_struct\_0\ X1))))$$