t27_matrix_7 (TMNF9StHiBH4b5JDqRXTAwBzkCQndVigdC6)

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Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $m1\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12\_matrix\_2 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k13\_matrix\_2 : \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $k3\_matrix\_7 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v2\_funct\_1 : \iota \Rightarrow o$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_funct\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_relat\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_finseq\_2 : \iota \Rightarrow \iota$ be given. Let $k1\_group\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_matrix\_2 : \iota \Rightarrow o$ be given. Let $k6\_partfun1 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v15\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_relat\_2 : \iota \Rightarrow o$ be given. Let $v4\_relat\_2 : \iota \Rightarrow o$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k11\_matrix\_2 : \iota \Rightarrow \iota$ be given. Let $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $v1\_relat\_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v2\_funct\_1\ X0) \Rightarrow ((k3\_relat\_1\ X0\ (k2\_funct\_1\ X0) = k4\_relat\_1\ (k9\_xtuple\_0\ X0)) \wedge (k3\_relat\_1\ (k2\_funct\_1\ X0)\ X0 = k4\_relat\_1\ (k10\_xtuple\_0\ X0)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (k1\_finseq\_2\ X0 = k1\_group\_1\ (k13\_matrix\_2\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v3\_matrix\_2\ X0)) \Rightarrow (\forall X1.\ (m1\_matrix\_2\ X1\ X0) \Leftrightarrow (m1\_subset\_1\ X1\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.k6\_partfun1\ X0 = k4\_relat\_1\ X0 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))) \wedge ((m1\_subset\_1\ X2\ X0) \wedge (m1\_subset\_1\ X3\ X0))) \Rightarrow (k5\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0) \wedge (m1\_subset\_1\ X1\ (k12\_matrix\_2\ X0))) \Rightarrow (k3\_matrix\_7\ X0\ X1 = k2\_funct\_1\ X1) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v5\_relat\_1\ X1\ X0)) \Rightarrow (k2\_relset\_1\ X0\ X1 = k10\_xtuple\_0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v4\_relat\_1\ X1\ X0)) \Rightarrow (k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1\_funct\_1\ X4) \wedge (m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))) \wedge ((v1\_funct\_1\ X5) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3))))) \Rightarrow (k1\_partfun1\ X0\ X1\ X2\ X3\ X4\ X5 = k3\_relat\_1\ X4\ X5) \tag{10}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v15\_algstr\_0\ (k13\_matrix\_2\ X0)) \wedge ((v2\_group\_1\ (k13\_matrix\_2\ X0)) \wedge (v3\_group\_1\ (k13\_matrix\_2\ X0)))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k4\_relat\_1\ X0)) \wedge ((v3\_relat\_2\ (k4\_relat\_1\ X0)) \wedge ((v4\_relat\_2\ (k4\_relat\_1\ X0)) \wedge (v8\_relat\_2\ (k4\_relat\_1\ X0)))) \tag{12}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((\neg v2\_struct\_0\ (k13\_matrix\_2\ X0))\wedge (v15\_algstr\_0\ (k13\_matrix\_2\ X0))) \tag{13}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((\neg v1\_xboole\_0\ (k12\_matrix\_2\ X0))\wedge (v3\_matrix\_2\ (k12\_matrix\_2\ X0))) \tag{14}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k4\_relat\_1\ X0))\wedge((v4\_relat\_1\ (k4\_relat\_1\ X0)\ X0)\wedge((v1\_funct\_1\ (k4\_relat\_1\ X0))\wedge(v1\_partfun1\ (k4\_relat\_1\ X0)\ X0))) \tag{15}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow((v1\_funct\_1\ (u2\_algstr\_0\ X0))\wedge ((v1\_funct\_2\ (u2\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u2\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{16}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v3\_matrix\_2\ X0))\Rightarrow(\forall X1.\ (m1\_matrix\_2\ X1\ X0)\Rightarrow((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0))\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0)))\wedge((v3\_funct\_2\ X1\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0))\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0)))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0))\ (k2\_finseq\_1\ (k11\_matrix\_2\ X0))))))))) \tag{17}$$

Assume the following.

$$\forall X0.(v1\_partfun1\ (k6\_partfun1\ X0)\ X0)\wedge(m1\_subset\_1\ (k6\_partfun1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ (k12\_matrix\_2\ X0)))\Rightarrow(m1\_matrix\_2\ (k3\_matrix\_7\ X0\ X1)\ (k12\_matrix\_2\ X0)) \tag{19}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v15\_algstr\_0\ (k13\_matrix\_2\ X0))\wedge (l3\_algstr\_0\ (k13\_matrix\_2\ X0))) \tag{20}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(X1 = k12\_matrix\_2\ X0)\Leftrightarrow (\forall X2.(X2 \in X1)\Leftrightarrow((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0))\wedge((v3\_funct\_2\ X2\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0))))))))) \tag{21}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((X2 = k2\_group\_1\ X0\ X1)\Leftrightarrow((k6\_algstr\_0\ X0\ X1\ X2 = k1\_group\_1\ X0)\wedge(k6\_algstr\_0\ X0\ X2\ X1 = k1\_group\_1\ X0))))) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v5\_relat\_1\ X1\ X0))\Rightarrow((v2\_funct\_2\ X1\ X0)\Leftrightarrow(k2\_relset\_1\ X0\ X1 = X0)) \tag{23}$$

Assume the following.

$$k1\_xboole\_0 = the\ (\lambda X0 : \iota.v1\_xboole\_0\ X0) \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(((X1 \neq k1\_xboole\_0)\Rightarrow((v1\_funct\_2\ X2\ X0\ X1)\Leftrightarrow(X0 = k1\_relset\_1\ X0\ X2)))\wedge((X1 = k1\_xboole\_0)\Rightarrow((v1\_funct\_2\ X2\ X0\ X1)\Leftrightarrow(X2 = k1\_xboole\_0)))) \tag{25}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(k1\_finseq\_2\ X0 = k6\_partfun1\ (k2\_finseq\_1\ X0)) \tag{26}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k6\_algstr\_0\ X0\ X1\ X2 = k5\_binop\_1\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0)\ X1\ X2))) \tag{27}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v15\_algstr\_0\ X1)\wedge (l3\_algstr\_0\ X1))\Rightarrow((X1 = k13\_matrix\_2\ X0)\Leftrightarrow((u1\_struct\_0\ X1 = k12\_matrix\_2\ X0)\wedge(\forall X2.(m1\_matrix\_2\ X2\ (k12\_matrix\_2\ X0))\Rightarrow(\forall X3.\ (m1\_matrix\_2\ X3\ (k12\_matrix\_2\ X0))\Rightarrow(k1\_binop\_1\ (u2\_algstr\_0\ X1)\ X2\ X3 = k1\_partfun1\ (k2\_finseq\_1\ (k11\_matrix\_2\ (k12\_matrix\_2\ X0)))\ (k2\_finseq\_1\ (k11\_matrix\_2\ (k12\_matrix\_2\ X0)))\ (k2\_finseq\_1\ (k11\_matrix\_2\ (k12\_matrix\_2\ X0)))\ (k2\_finseq\_1\ (k11\_matrix\_2\ (k12\_matrix\_2\ X0)))\ X2\ X3)))))) \tag{28}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))\Rightarrow(((v1\_relat\_2\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_funct\_2\ X1\ X0\ X0))))\Rightarrow((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge(v3\_funct\_2\ X1\ X0\ X0)))) \tag{29}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(((v1\_funct\_1\ X2)\wedge(v3\_funct\_2\ X2\ X0\ X1))\Rightarrow((v1\_funct\_1\ X2)\wedge((v2\_funct\_1\ X2)\wedge(v2\_funct\_2\ X2\ X1)))) \tag{30}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v3\_relat\_2\ X0)\wedge(v8\_relat\_2\ X0)))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_relat\_2\ X0)) \tag{31}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \tag{32}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{33}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v1\_partfun1\ X2\ X0)\Rightarrow(v1\_funct\_2\ X2\ X0\ X1)) \tag{34}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.(m1\_matrix\_2\ X1\ (k12\_matrix\_2\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k13\_matrix\_2\ X0)))\Rightarrow(((X2 = X1)\wedge(r1\_xxreal\_0\ np\_\_1\ X0))\Rightarrow(k3\_matrix\_7\ X0\ X1 = k2\_group\_1\ (k13\_matrix\_2\ X0)\ X2))))$$