

l48\_matrlin  
(TMc3YetKNrcxov2dgWzzrxsrtPdm2eMUu7R)

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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  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  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  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v8\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v9\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v10\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v11\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_matrlin : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_matrlin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_matrlin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k9\_pre\_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_matrlin : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge \\
& ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\
& X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
& ((v1\_matrlin X1 X0) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\
& (m1\_matrlin X2 X0 X1) \Rightarrow (m2\_finseq\_1 X2 (u1\_struct\_0 X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)) \tag{3}$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (m2\_subset\_1 (k3\_finseq\_1 X0) k1\_numbers k5\_numbers) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\
& ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge (((\neg v2\_struct\_0 \\
& X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 X1 \\
& X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v1\_matrlin X1 X0) \wedge \\
& (l1\_vectsp\_1 X1 X0)))))))))) \wedge (((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 \\
& X2) \wedge ((v8\_vectsp\_1 X2 X0) \wedge ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 \\
& X2 X0) \wedge ((v11\_vectsp\_1 X2 X0) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 \\
& X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v1\_matrlin X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))))))) \wedge \\
& (((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2)))))) \wedge ((m1\_finseq\_1 X4 (u1\_struct\_0 X1)) \wedge \\
& (m1\_matrlin X5 X0 X2)))))) \Rightarrow ((v1\_matrix\_1 (k10\_matrlin X0 X1 X2 \\
& X3 X4 X5)) \wedge (m2\_finseq\_1 (k10\_matrlin X0 X1 X2 X3 X4 X5) (k3\_finseq\_2 \\
& (u1\_struct\_0 X0))))
\end{aligned} \tag{5}$$

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 ( \\
& (v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 \\
& X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\
& X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
& ((v1\_matrlin X1 X0) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2. \\
& ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v8\_vectsp\_1 X2 X0) \wedge \\
& ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 X2 X0) \wedge ((v11\_vectsp\_1 X2 \\
& X0) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& ((v1\_matrlin X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))))))) \Rightarrow (\forall X3. \\
& ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X4. (m2\_finseq\_1 X4 (u1\_struct\_0 \\
& X1)) \Rightarrow (\forall X5. (m1\_matrlin X5 X0 X2) \Rightarrow (\forall X6. ((v1\_matrix\_1 \\
& X6) \wedge (m2\_finseq\_1 X6 (k3\_finseq\_2 (u1\_struct\_0 X0)))) \Rightarrow ((X6 = k10\_matrlin \\
& X0 X1 X2 X3 X4 X5) \Leftrightarrow ((k3\_finseq\_1 X6 = k3\_finseq\_1 X4) \wedge (\forall X7. \\
& (v7\_ordinal1 X7) \Rightarrow ((X7 \in k9\_xtuple\_0 X4) \Rightarrow (k9\_pre\_poly (u1\_struct\_0 \\
& X0) k5\_numbers (k3\_finseq\_2 (u1\_struct\_0 X0)) X6 X7 = k9\_matrlin \\
& X0 X2 X5 (k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X2) X3 (k7\_partfun1 \\
& (u1\_struct\_0 X1) X4 X7)))))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\
& (\forall X1. (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow ((X1 = k3\_finseq\_1 \\
& X0) \Leftrightarrow (k2\_finseq\_1 X1 = k9\_xtuple\_0 X0)))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge (v33\_algstr\_0 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_group\_1 X0) \wedge \\
& (v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 \\
& X0) \wedge (v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
& (v9\_vectsp\_1 X1 X0) \wedge (v10\_vectsp\_1 X1 X0) \wedge (v11\_vectsp\_1 X1 \\
& X0) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge \\
& ((v1\_matrlin X1 X0) \wedge (l1\_vectsp\_1 X1 X0)))))) \Rightarrow (\forall X2. \\
& ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v8\_vectsp\_1 X2 X0) \wedge \\
& (v9\_vectsp\_1 X2 X0) \wedge (v10\_vectsp\_1 X2 X0) \wedge (v11\_vectsp\_1 X2 \\
& X0) \wedge (v2\_rlvect\_1 X2) \wedge (v3\_rlvect\_1 X2) \wedge (v4\_rlvect\_1 X2) \wedge \\
& ((v1\_matrlin X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))) \Rightarrow (\forall X3. \\
& ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X4. (m1\_matrlin X4 X0 X1) \Rightarrow ( \\
& \forall X5. (m1\_matrlin X5 X0 X2) \Rightarrow (k9\_xtuple\_0 (k10\_matrlin X0 \\
& X1 X2 X3 X4 X5) = k9\_xtuple\_0 X4))))))
\end{aligned}$$