

t49\_matrixr2 (TM-  
NiC6i4B1yx1D7HWUXRF8naGJ89BscoHm4)

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Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k12\_matrixr1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ & X1 k1\_numbers) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Rightarrow (k6\_rvsum\_1 \\ & (k8\_rvsum\_1 X0 X1) = k4\_rvsum\_1 (k6\_rvsum\_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ & X1 k1\_numbers) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Rightarrow (k6\_rvsum\_1 \\ & (k8\_rvsum\_1 X0 X1) = k8\_rvsum\_1 X1 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.((v1\_matrix\_1 \\ & X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers))) \Rightarrow ((k3\_finseq\_1 \\ & X1 = k3\_finseq\_1 X0) \Rightarrow (k3\_finseq\_1 (k12\_matrixr1 X1 X0) = k1\_matrix\_1 \\ & X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ & X1 k1\_numbers) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Rightarrow (k8\_rvsum\_1 \\ & X0 X1 = k4\_rvsum\_1 X0 (k6\_rvsum\_1 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ X1 k1\_numbers) \Rightarrow (\forall X2.((v1\_matrix\_1 X2) \wedge (m2\_finseq\_1 X2 \\ (k3\_finseq\_2 k1\_numbers))) \Rightarrow (((k3\_finseq\_1 X0 = k3\_finseq\_1 X2) \wedge \\ (k3\_finseq\_1 X1 = k3\_finseq\_1 X0)) \Rightarrow ((r1\_xxreal\_0 (k3\_finseq\_1 \\ X0) k6\_numbers) \vee (k12\_matrixr1 X2 (k8\_rvsum\_1 X0 X1) = k8\_rvsum\_1 \\ (k12\_matrixr1 X2 X0) (k12\_matrixr1 X2 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow (k6\_rvsum\_1 (k8\_rvsum\_1 \\ X0 X1) = k8\_rvsum\_1 X1 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ X1 k1\_numbers) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Rightarrow (X0 = k8\_rvsum\_1 \\ (k4\_rvsum\_1 X0 X1) X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow ((k3\_finseq\_1 X0 = \\ k3\_finseq\_1 X1) \Rightarrow (k3\_finseq\_1 (k8\_rvsum\_1 X0 X1) = k3\_finseq\_1 \\ X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow (k6\_rvsum\_1 (k6\_rvsum\_1 X0) = X0) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge ( \\ (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ( \\ v3\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow (m2\_finseq\_1 (k8\_rvsum\_1 \\ X0 X1) k1\_numbers) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v3\_valued\_0 X0)\wedge(v1\_finseq\_1 X0))))\Rightarrow(m2\_finseq\_1 (k6\_rsum\_1 X0) k1\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_matrix\_1 X0)\wedge(m1\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)))\wedge(m1\_finseq\_1 X1 k1\_numbers))\Rightarrow(m2\_finseq\_1 (k12\_matrixr1 X0 X1) k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1 X0 k1\_numbers)\Rightarrow(v3\_valued\_0 X0) \quad (15)$$

**Theorem 1**

$$\forall X0.(m2\_finseq\_1 X0 k1\_numbers)\Rightarrow(\forall X1.(((v1\_matrix\_1 X1)\wedge(m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers)))\Rightarrow((k3\_finseq\_1 X1 = k3\_finseq\_1 X0)\Rightarrow((r1\_xxreal\_0 (k3\_finseq\_1 X0) k6\_numbers)\vee((r1\_xxreal\_0 (k1\_matrix\_1 X1) k6\_numbers)\vee(k12\_matrixr1 X1 (k6\_rsum\_1 X0) = k6\_rsum\_1 (k12\_matrixr1 X1 X0)))))))$$