

t30\_matrix\_9  
(TMPdcunyn7oiud6EFYGdJSBrdwBby1d4ocj)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k3\_finseq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v4\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (( \\ v1\_funct\_1\ X1) \wedge ((v3\_card\_1\ X1\ X0) \wedge (v1\_finseq\_1\ X1)))) \Rightarrow (k4\_finseq\_1 \\ X1 = k2\_finseq\_1\ X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1\_relat\_1\ X3) \wedge \\ ((v1\_funct\_1\ X3) \wedge (v1\_finseq\_1\ X3))) \Rightarrow ((X3 = k11\_finseq\_1\ X0\ X1 \\ X2) \Leftrightarrow ((k3\_finseq\_1\ X3 = np\_3) \wedge ((k1\_funct\_1\ X3\ np\_1 = X0) \wedge ((k1\_funct\_1 \\ X3\ np\_2 = X1) \wedge (k1\_funct\_1\ X3\ np\_3 = X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$k2\_finseq\_1\ np\_3 = k1\_enumset1\ np\_1\ np\_2\ np\_3 \quad (3)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0\ np\_3) \wedge (m2\_subset\_1\ np\_3\ k1\_numbers\ k5\_numbers)) \wedge \\ ((m1\_subset\_1\ np\_3\ k5\_numbers) \wedge (m1\_subset\_1\ np\_3\ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow \\ & (k4\_finseq\_1 \ X0 = k9\_xtuple\_0 \ X0) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 \ X0) \wedge \\ & ((m1\_subset\_1 \ X1 \ X0) \wedge ((m1\_subset\_1 \ X2 \ X0) \wedge (m1\_subset\_1 \ X3 \ X0)))) \Rightarrow \\ & (k3\_finseq\_4 \ X0 \ X1 \ X2 \ X3 = k11\_finseq\_1 \ X1 \ X2 \ X3) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (v1\_relat\_1 \ (k11\_finseq\_1 \ X0 \\ & X1 \ X2)) \wedge (v1\_funct\_1 \ (k11\_finseq\_1 \ X0 \ X1 \ X2)) \end{aligned} \quad (10)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k4\_ordinal1) \wedge (v3\_ordinal1 \ k4\_ordinal1) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. v3\_card\_1 \ (k11\_finseq\_1 \ X0 \ X1 \\ & X2) \ np\_3 \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. v1\_finseq\_1 \ (k11\_finseq\_1 \ X0 \\ & X1 \ X2) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (X3 = k1\_enumset1 \\ & X0 \ X1 \ X2) \Leftrightarrow (\forall X4. (X4 \in X3) \Leftrightarrow (\neg (X4 \neq X0) \wedge ((X4 \neq X1) \wedge (X4 \neq X2)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge (( \\
& \quad v1\_funct\_2\ X1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0)) \wedge ((v3\_funct\_2 \\
& \quad X1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0)) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1\ (k2\_finseq\_1\ X0)\ (k2\_finseq\_1\ X0)))))) \Rightarrow ((v4\_matrix\_2 \\
& \quad X1\ X0) \Leftrightarrow (\exists X2.(v7\_ordinal1\ X2) \wedge (\exists X3.(v7\_ordinal1 \\
& \quad X3) \wedge ((X2 \in k9\_xtuple\_0\ X1) \wedge ((X3 \in k9\_xtuple\_0\ X1) \wedge ((X2 \neq X3) \wedge (( \\
& \quad k1\_funct\_1\ X1\ X2 = X3) \wedge ((k1\_funct\_1\ X1\ X3 = X2) \wedge (\forall X4.(v7\_ordinal1 \\
& \quad X4) \Rightarrow ((X4 \in k9\_xtuple\_0\ X1) \Rightarrow ((X4 = X2) \vee ((X4 = X3) \vee (k1\_funct\_1\ X1 \\
& \quad X4 = X4))))))))))))) \\
& \hspace{20em} (15)
\end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1) \Rightarrow (v7\_ordinal1\ X0) \quad (16)$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_funct\_1\ X0) \wedge ((v1\_funct\_2\ X0\ (k2\_finseq\_1\ np\_3) \\
& (k2\_finseq\_1\ np\_3)) \wedge ((v3\_funct\_2\ X0\ (k2\_finseq\_1\ np\_3)\ (k2\_finseq\_1 \\
& \quad np\_3)) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_finseq\_1 \\
& \quad np\_3)\ (k2\_finseq\_1\ np\_3)))))) \Rightarrow ((X0 = k3\_finseq\_4\ k5\_numbers \\
& \quad np\_1\ np\_3\ np\_2) \Rightarrow (v4\_matrix\_2\ X0\ np\_3))
\end{aligned}$$