

t22\_finseq\_1  
(TMUtcXqUyyD1E3hPwh5fimH2DBQQEbTfaVG)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{1}$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (k5\_card\_1 X0 = k1\_card\_1 X0) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k4\_finseq\_1 X0 = k9\_xtuple\_0 X0) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow ((v1\_relat\_1 (k7\_finseq\_1 X0 X1)) \wedge ((v1\_funct\_1 (k7\_finseq\_1 X0 X1)) \wedge (v1\_finseq\_1 (k7\_finseq\_1 X0 X1)))) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (m1\_subset\_1 (k5\_card\_1 X0) k4\_ordinal1) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(m2\_subset\_1 (k2\_nat\_1 X0 X1) k1\_numbers k5\_numbers) \quad (7)$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ &\quad (\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge(v1\_finseq\_1 X2)))\Rightarrow((X2 = k7\_finseq\_1 X0 X1)\Leftrightarrow((k4\_finseq\_1 X2 = k2\_finseq\_1 \\ &\quad (k2\_nat\_1 (k3\_finseq\_1 X0) (k3\_finseq\_1 X1))))\wedge((\forall X3.( \\ v7\_ordinal1 X3)\Rightarrow((X3 \in k4\_finseq\_1 X0)\Rightarrow(k1\_funct\_1 X2 X3 = k1\_funct\_1 \\ &\quad X0 X3))))\wedge(\forall X3.(v7\_ordinal1 X3)\Rightarrow((X3 \in k4\_finseq\_1 X1)\Rightarrow \\ &\quad (k1\_funct\_1 X2 (k2\_nat\_1 (k3\_finseq\_1 X0) X3) = k1\_funct\_1 X1 X3)))))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} &\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ &\quad (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow((X1 = k3\_finseq\_1 X0) \\ &\quad \Leftrightarrow(k2\_finseq\_1 X1 = k9\_xtuple\_0 X0))) \quad (9) \end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (10)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \quad (11)$$

$$((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finset\_1 X0)))$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ &\quad (\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)))\Rightarrow(k3\_finseq\_1 (k7\_finseq\_1 X0 X1) = k2\_nat\_1 (k3\_finseq\_1 \\ &\quad X0) (k3\_finseq\_1 X1))) \end{aligned}$$