

## l83\_finseq\_3

(TMYkrn52qnVZdfM6V5AQBZYPFgvXJwgSpQ)

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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  $k1\_finseq\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1)))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2)))) \Rightarrow (k7\_finseq\_1 (k7\_finseq\_1 X0 X1) X2 = k7\_finseq\_1 X0 (k7\_finseq\_1 \\ & \quad X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.\forall X2.k1\_finseq\_3 (k7\_finseq\_1 X0 (k9\_finseq\_1 \\ & \quad X1)) X2 = k7\_finseq\_1 (k1\_finseq\_3 X0 X2) (k1\_finseq\_3 (k9\_finseq\_1 \\ & \quad X1) X2)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 X0)) \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 \\ & \quad X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow \\ & \quad ((v1\_relat\_1 (k7\_finseq\_1 X0 X1)) \wedge ((v1\_funct\_1 (k7\_finseq\_1 \\ & \quad X0 X1)) \wedge (v1\_finseq\_1 (k7\_finseq\_1 X0 X1)))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 \\ X0)))\Rightarrow((v1\_relat\_1 (k1\_finseq\_3 X0 X1))\wedge((v1\_funct\_1 (k1\_finseq\_3 \\ X0 X1))\wedge(v1\_finseq\_1 (k1\_finseq\_3 X0 X1)))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow \\ (\forall X1.(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge \\ v1\_finseq\_1 X2)))\Rightarrow(\forall X3.k1\_finseq\_3 (k7\_finseq\_1 X2 X0) \\ X3 = k7\_finseq\_1 (k1\_finseq\_3 X2 X3) (k1\_finseq\_3 X0 X3)))\Rightarrow(\forall X2. \\ ((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge(v1\_finseq\_1 X2)))\Rightarrow(\forall X3. \\ k1\_finseq\_3 (k7\_finseq\_1 X2 (k7\_finseq\_1 X0 (k9\_finseq\_1 X1))) \\ X3 = k7\_finseq\_1 (k1\_finseq\_3 X2 X3) (k1\_finseq\_3 (k7\_finseq\_1 \\ X0 (k9\_finseq\_1 X1) X3)))) \end{aligned}$$