

t39\_zf\_lang  
(TMJmBF8tnGv7AGr7fYtZx7aRtgbwHKvFqwp)

October 27, 2020

Let  $v1\_zf\_lang : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v8\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k21\_zf\_lang : \iota \Rightarrow \iota$  be given. Let  $k10\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k22\_zf\_lang : \iota \Rightarrow \iota$  be given. 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  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v5\_zf\_lang : \iota \Rightarrow o$  be given. Let  $np\_3 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k7\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_zf\_lang : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow (k1\_funct\_1 (k7\_finseq\_1 (k9\_finseq\_1 X0) X1) np\_1 = X0) \quad (1)$$

Assume the following.

$$\forall X0. ((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ((v5\_zf\_lang X0) \Rightarrow (k1\_funct\_1 X0 np\_1 = np\_3)) \quad (2)$$

Assume the following.

$$((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1 X1 X0)\wedge(m1\_finseq\_1 X2 X0))\Rightarrow(k8\_finseq\_1 X0 X1 X2 = k7\_finseq\_1 X1 X2) \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow(k12\_finseq\_1 X0 X1 = k5\_finseq\_1 X1) \quad (8)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_finseq\_1 X0 k5\_numbers)\wedge(m1\_finseq\_1 X1 k5\_numbers))\Rightarrow(m2\_finseq\_1 (k7\_zf\_lang X0 X1) k5\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1 X0 k5\_numbers)\Rightarrow(m2\_finseq\_1 (k6\_zf\_lang X0) k5\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow(m2\_finseq\_1 (k12\_finseq\_1 X0 X1) X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_zf\_lang X0)\wedge(m1\_finseq\_1 X0 k5\_numbers))\wedge((v1\_zf\_lang X1)\wedge(m1\_finseq\_1 X1 k5\_numbers)))\Rightarrow((v1\_zf\_lang (k10\_zf\_lang X0 X1))\wedge(m2\_finseq\_1 (k10\_zf\_lang X0 X1) k5\_numbers)) \quad (14)$$

Assume the following.

$$\forall X0.(m2\_finseq\_1 X0 k5\_numbers)\Rightarrow(k6\_zf\_lang X0 = k8\_finseq\_1 k5\_numbers (k12\_finseq\_1 k5\_numbers np\_2) X0) \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (( \\
& (v5\_zf\_lang X0) \vee (v8\_zf\_lang X0)) \Rightarrow (\forall X1.((v1\_zf\_lang X1) \wedge \\
& (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow (((v5\_zf\_lang X0) \Rightarrow ((X1 = k22\_zf\_lang \\
& X0) \Leftrightarrow (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k7\_zf\_lang X2 X1 = X0)))) \wedge ((\neg v5\_zf\_lang X0) \Rightarrow ((X1 = k22\_zf\_lang \\
& X0) \Leftrightarrow (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k10\_zf\_lang X2 X1 = X0))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (( \\
& (v5\_zf\_lang X0) \vee (v8\_zf\_lang X0)) \Rightarrow (\forall X1.((v1\_zf\_lang X1) \wedge \\
& (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow (((v5\_zf\_lang X0) \Rightarrow ((X1 = k21\_zf\_lang \\
& X0) \Leftrightarrow (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k7\_zf\_lang X1 X2 = X0)))) \wedge ((\neg v5\_zf\_lang X0) \Rightarrow ((X1 = k21\_zf\_lang \\
& X0) \Leftrightarrow (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (k10\_zf\_lang X1 X2 = X0))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (( \\
& v8\_zf\_lang X0) \Leftrightarrow (\exists X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 \\
& k5\_numbers)) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (X0 = k10\_zf\_lang X1 X2))))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (\forall X1. \\
& ((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow (k10\_zf\_lang \\
& X0 X1 = k6\_zf\_lang (k7\_zf\_lang (k6\_zf\_lang X0) (k6\_zf\_lang X1))))
\end{aligned} \tag{19}$$

### Theorem 1

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (\forall X1. \\
& ((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow ((v8\_zf\_lang \\
& X0) \Rightarrow ((\neg (X1 = k21\_zf\_lang X0) \wedge (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 \\
& X2 k5\_numbers)) \Rightarrow (k10\_zf\_lang X1 X2 \neq X0))) \wedge ((\exists X2.((v1\_zf\_lang \\
& X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge (k10\_zf\_lang X1 X2 = X0)) \Rightarrow (X1 = \\
& k21\_zf\_lang X0)) \wedge ((\neg (X1 = k22\_zf\_lang X0) \wedge (\forall X2.((v1\_zf\_lang \\
& X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \Rightarrow (k10\_zf\_lang X2 X1 \neq X0))) \wedge ( \\
& (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge ( \\
& k10\_zf\_lang X2 X1 = X0)) \Rightarrow (X1 = k22\_zf\_lang X0))))))
\end{aligned}$$