

t36\_zf\_lang1 (TMTnL-  
WXXLy2wzb1ZVS6Wh8iYwcZQDSDfq2P)

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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  $v10\_zf\_lang : \iota \Rightarrow o$  be given. Let  $v5\_zf\_lang : \iota \Rightarrow o$  be given. Let  $v9\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k21\_zf\_lang : \iota \Rightarrow \iota$  be given. Let  $k22\_zf\_lang : \iota \Rightarrow \iota$  be given. Let  $v8\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k10\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v11\_zf\_lang : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zf\_lang : \iota$  be given. Let  $k13\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k4\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k5\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k6\_zf\_lang : \iota \Rightarrow \iota$  be given. Let  $k7\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_zf\_lang : \iota \Rightarrow o$  be given. Let  $k8\_zf\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let

$m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (( \\
& \quad \neg(v8\_zf\_lang X0) \wedge (\forall X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 \\
& \quad X1 k5\_numbers)) \Rightarrow (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 \\
& \quad k5\_numbers)) \Rightarrow (X0 \neq k10\_zf\_lang X1 X2)))) \wedge ((\exists X1.((v1\_zf\_lang \\
& \quad X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge \\
& \quad (m2\_finseq\_1 X2 k5\_numbers)) \wedge (X0 = k10\_zf\_lang X1 X2))) \Rightarrow (v8\_zf\_lang \\
& \quad X0)) \wedge ((\neg(v9\_zf\_lang X0) \wedge (\forall X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 \\
& \quad X1 k5\_numbers)) \Rightarrow (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 \\
& \quad k5\_numbers)) \Rightarrow (X0 \neq k11\_zf\_lang X1 X2)))) \wedge ((\exists X1.((v1\_zf\_lang \\
& \quad X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge \\
& \quad (m2\_finseq\_1 X2 k5\_numbers)) \wedge (X0 = k11\_zf\_lang X1 X2))) \Rightarrow (v9\_zf\_lang \\
& \quad X0)) \wedge ((\neg(v10\_zf\_lang X0) \wedge (\forall X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 \\
& \quad X1 k5\_numbers)) \Rightarrow (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 \\
& \quad k5\_numbers)) \Rightarrow (X0 \neq k12\_zf\_lang X1 X2)))) \wedge ((\exists X1.((v1\_zf\_lang \\
& \quad X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge \\
& \quad (m2\_finseq\_1 X2 k5\_numbers)) \wedge (X0 = k12\_zf\_lang X1 X2))) \Rightarrow (v10\_zf\_lang \\
& \quad X0)) \wedge ((\neg(v11\_zf\_lang X0) \wedge (\forall X1.(m2\_subset\_1 X1 k5\_numbers \\
& \quad k1\_zf\_lang)) \Rightarrow (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \Rightarrow \\
& \quad (X0 \neq k13\_zf\_lang X1 X2)))) \wedge ((\exists X1.(m2\_subset\_1 X1 k5\_numbers \\
& \quad k1\_zf\_lang) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& \quad (X0 = k13\_zf\_lang X1 X2))) \Rightarrow (v11\_zf\_lang X0)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (( \\
& \neg(v2\_zf\_lang X0) \wedge (\forall X1.(m2\_subset\_1 X1 k5\_numbers k1\_zf\_lang) \Rightarrow \\
& (\forall X2.(m2\_subset\_1 X2 k5\_numbers k1\_zf\_lang) \Rightarrow (X0 \neq k4\_zf\_lang \\
& X1 X2)))) \wedge (((\exists X1.(m2\_subset\_1 X1 k5\_numbers k1\_zf\_lang) \wedge \\
& (\exists X2.(m2\_subset\_1 X2 k5\_numbers k1\_zf\_lang) \wedge (X0 = k4\_zf\_lang \\
& X1 X2))) \Rightarrow (v2\_zf\_lang X0)) \wedge ((\neg(v3\_zf\_lang X0) \wedge (\forall X1.(m2\_subset\_1 \\
& X1 k5\_numbers k1\_zf\_lang) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k5\_numbers \\
& k1\_zf\_lang) \Rightarrow (X0 \neq k5\_zf\_lang X1 X2)))) \wedge (((\exists X1.(m2\_subset\_1 \\
& X1 k5\_numbers k1\_zf\_lang) \wedge (\exists X2.(m2\_subset\_1 X2 k5\_numbers \\
& k1\_zf\_lang) \wedge (X0 = k5\_zf\_lang X1 X2))) \Rightarrow (v3\_zf\_lang X0)) \wedge ((\neg(v4\_zf\_lang \\
& X0) \wedge (\forall X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow \\
& (X0 \neq k6\_zf\_lang X1))) \wedge (((\exists X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 \\
& X1 k5\_numbers)) \wedge (X0 = k6\_zf\_lang X1)) \Rightarrow (v4\_zf\_lang X0)) \wedge ((\neg(v5\_zf\_lang \\
& X0) \wedge (\forall X1.((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow \\
& (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \Rightarrow ( \\
& X0 \neq k7\_zf\_lang X1 X2)))) \wedge (((\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 = k7\_zf\_lang X1 X2))) \Rightarrow (v5\_zf\_lang X0)) \wedge ((\neg( \\
& v6\_zf\_lang X0) \wedge (\forall X1.(m2\_subset\_1 X1 k5\_numbers k1\_zf\_lang) \Rightarrow \\
& (\forall X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \Rightarrow ( \\
& X0 \neq k8\_zf\_lang X1 X2)))) \wedge (((\exists X1.(m2\_subset\_1 X1 k5\_numbers \\
& k1\_zf\_lang) \wedge (\exists X2.((v1\_zf\_lang X2) \wedge (m2\_finseq\_1 X2 k5\_numbers)) \wedge \\
& (X0 = k8\_zf\_lang X1 X2))) \Rightarrow (v6\_zf\_lang X0)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (\forall X1. \\
& ((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow ((k21\_zf\_lang \\
& (k7\_zf\_lang X0 X1) = X0) \wedge (k22\_zf\_lang (k7\_zf\_lang X0 X1) = X1)))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v1\_zf\_lang X0) \wedge (m1\_finseq\_1 X0 k5\_numbers)) \wedge \\
& ((v1\_zf\_lang X1) \wedge (m1\_finseq\_1 X1 k5\_numbers))) \Rightarrow ((v1\_zf\_lang \\
& (k11\_zf\_lang X0 X1)) \wedge (m2\_finseq\_1 (k11\_zf\_lang X0 X1) k5\_numbers))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow (\forall X1. \\
& ((v1\_zf\_lang X1) \wedge (m2\_finseq\_1 X1 k5\_numbers)) \Rightarrow (k12\_zf\_lang \\
& X0 X1 = k7\_zf\_lang (k11\_zf\_lang X0 X1) (k11\_zf\_lang X1 X0)))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\forall X0.((v1\_zf\_lang X0) \wedge (m2\_finseq\_1 X0 k5\_numbers)) \Rightarrow ((v10\_zf\_lang X0) \Rightarrow ((v5\_zf\_lang X0) \wedge ((v9\_zf\_lang (k21\_zf\_lang X0)) \wedge (v9\_zf\_lang (k22\_zf\_lang X0)))))$$