

## l53\_conlat\_1

(TMJCrAF1Pf3nGg9vvGKu3sYXjHzfX3jMKGB)

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Let  $v1\_conlat\_1 : \iota \Rightarrow o$  be given. Let  $l1\_conlat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l2\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_conlat\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_conlat\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_conlat\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (\forall X1. \\ & (X1 \in k8\_conlat\_1 X0) \Leftrightarrow ((v4\_conlat\_1 X1 X0) \wedge ((\neg v5\_conlat\_1 X1 X0) \wedge \\ & ((v7\_conlat\_1 X1 X0) \wedge (l2\_conlat\_1 X1 X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (k8\_conlat\_1 X0 = k7\_conlat\_1 X0) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v5\_relat\_1 X1 X0)) \Rightarrow (k2\_relset\_1 X0 X1 = k10\_xtuple\_0 X1) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \tag{4}$$

Assume the following.

$$\forall X0. ((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (\neg v1\_xboole\_0 (k7\_conlat\_1 X0)) \tag{5}$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1\_conlat\_1 \ X0) \wedge (l1\_conlat\_1 \ X0)) \Rightarrow ((v1\_funct\_1 \\ (k10\_conlat\_1 \ X0)) \wedge ((v1\_funct\_2 \ (k10\_conlat\_1 \ X0) \ (k2\_zfmisc\_1 \\ (k8\_conlat\_1 \ X0) \ (k8\_conlat\_1 \ X0)) \ (k8\_conlat\_1 \ X0)) \wedge (m1\_subset\_1 \\ (k10\_conlat\_1 \ X0) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k8\_conlat\_1 \\ X0) \ (k8\_conlat\_1 \ X0)) \ (k8\_conlat\_1 \ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. k4\_tarski \ X0 \ X1 = k2\_tarski \ (k2\_tarski \ X0 \ X1) \ (k1\_tarski \ X0) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (\forall X1.(X1 = \\ k10\_xtuple\_0 \ X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9\_xtuple\_0 \\ X0) \wedge (X2 = k1\_funct\_1 \ X0 \ X3)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.(X2 = k2\_zfmisc\_1 \ X0 \ X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow (\exists X4. \exists X5.(X4 \in X0) \wedge ((X5 \in X1) \wedge (X3 = k4\_tarski \\ X4 \ X5)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (((X1 \neq k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \ X2 \ X0 \\ X1) \Leftrightarrow (X0 = k1\_relset\_1 \ X0 \ X2))) \wedge ((X1 = k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \\ X2 \ X0 \ X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (\forall X1. \forall X2. \\ k1\_binop\_1 \ X0 \ X1 \ X2 = k1\_funct\_1 \ X0 \ (k4\_tarski \ X1 \ X2)) \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. k2\_tarski \ X0 \ X1 = k2\_tarski \ X1 \ X0 \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow ((v4\_relat\_1 \ X2 \ X0) \wedge (v5\_relat\_1 \ X2 \ X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (v1\_relat\_1 \ X2) \end{aligned} \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (\forall X1. \\ & ((v4\_conlat\_1 X1 X0) \wedge ((\neg v5\_conlat\_1 X1 X0) \wedge ((v7\_conlat\_1 X1 X0) \wedge \\ & (l2\_conlat\_1 X1 X0)))) \Rightarrow (\forall X2.((v4\_conlat\_1 X2 X0) \wedge ((\neg v5\_conlat\_1 \\ & X2 X0) \wedge ((v7\_conlat\_1 X2 X0) \wedge (l2\_conlat\_1 X2 X0)))) \Rightarrow (k1\_binop\_1 \\ & (k10\_conlat\_1 X0) X1 X2 \in k2\_reset\_1 (k8\_conlat\_1 X0) (k10\_conlat\_1 \\ & X0)))) \end{aligned}$$