

t20\_conlat\_1

(TMLh3ZTPuEZuBgjq6VeFwHh6Qn4AtfhpJnK)

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Let  $v1\_conlat\_1 : \iota \Rightarrow o$  be given. Let  $l1\_conlat\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v5\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g2\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_conlat\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_conlat\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l5\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_conlat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (r1\_tarski X1 \\ & (k3\_funct\_2 (k9\_setfam\_1 (u4\_struct\_0 X0)) (k9\_setfam\_1 (u1\_struct\_0 \\ & X0)) (k2\_conlat\_1 X0) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) \\ & (k9\_setfam\_1 (u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_conlat\_1 X0) \wedge (l1\_conlat\_1 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (((\neg v5\_conlat\_1 \\
& (g2\_conlat\_1 X0 (k3\_funct\_2 (k9\_setfam\_1 (u4\_struct\_0 X0)) (k9\_setfam\_1 \\
& (u1\_struct\_0 X0)) (k2\_conlat\_1 X0) (k3\_funct\_2 (k1\_zfmisc\_1 ( \\
& u1\_struct\_0 X0)) (k9\_setfam\_1 (u4\_struct\_0 X0)) (k1\_conlat\_1 \\
& X0) X1)) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k9\_setfam\_1 \\
& (u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1)) X0) \wedge ((v7\_conlat\_1 (g2\_conlat\_1 \\
& X0 (k3\_funct\_2 (k9\_setfam\_1 (u4\_struct\_0 X0)) (k9\_setfam\_1 (u1\_struct\_0 \\
& X0)) (k2\_conlat\_1 X0) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) \\
& (k9\_setfam\_1 (u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1)) (k3\_funct\_2 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k9\_setfam\_1 (u4\_struct\_0 X0)) \\
& (k1\_conlat\_1 X0) X1)) X0) \wedge (l2\_conlat\_1 (g2\_conlat\_1 X0 (k3\_funct\_2 \\
& (k9\_setfam\_1 (u4\_struct\_0 X0)) (k9\_setfam\_1 (u1\_struct\_0 X0)) \\
& (k2\_conlat\_1 X0) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) ( \\
& k9\_setfam\_1 (u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1)) (k3\_funct\_2 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k9\_setfam\_1 (u4\_struct\_0 X0)) \\
& (k1\_conlat\_1 X0) X1)) X0))) \wedge (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (u4\_struct\_0 X0))) \Rightarrow (((\neg v5\_conlat\_1 (g2\_conlat\_1 X0 X2 X3) X0) \wedge \\
& ((v7\_conlat\_1 (g2\_conlat\_1 X0 X2 X3) X0) \wedge (l2\_conlat\_1 (g2\_conlat\_1 \\
& X0 X2 X3) X0))) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski (k3\_funct\_2 (k9\_setfam\_1 \\
& (u4\_struct\_0 X0)) (k9\_setfam\_1 (u1\_struct\_0 X0)) (k2\_conlat\_1 \\
& X0) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k9\_setfam\_1 ( \\
& u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1)) X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \tag{3}$$

Assume the following.

$$\forall X0. k9\_setfam\_1 X0 = k1\_zfmisc\_1 X0 \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\
& (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (k3\_funct\_2 X0 \\
& X1 X2 X3 = k1\_funct\_1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \tag{6}$$

Assume the following.

$$\forall X0. (l1\_conlat\_1 X0) \Rightarrow (l5\_struct\_0 X0) \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0))\Rightarrow(m1\_subset\_1 ( \\ & k3\_funct\_2 X0 X1 X2 X3) X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_conlat\_1 X0)\wedge(l1\_conlat\_1 X0))\Rightarrow((v1\_funct\_1 \\ & (k1\_conlat\_1 X0))\wedge((v1\_funct\_2 (k1\_conlat\_1 X0) (k9\_setfam\_1 \\ & (u1\_struct\_0 X0)) (k9\_setfam\_1 (u4\_struct\_0 X0)))\wedge(m1\_subset\_1 \\ & (k1\_conlat\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k9\_setfam\_1 (u1\_struct\_0 \\ & X0)) (k9\_setfam\_1 (u4\_struct\_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l5\_struct\_0 X0)\wedge((m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u4\_struct\_0 X0))))))\Rightarrow((v4\_conlat\_1 (g2\_conlat\_1 X0 X1 X2) X0)\wedge \\ & (l2\_conlat\_1 (g2\_conlat\_1 X0 X1 X2) X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarski X0 X1)\wedge(r1\_tarski X1 X0)) \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_conlat\_1 X0)\wedge(l1\_conlat\_1 X0))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow((\exists X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u4\_struct\_0 X0)))\wedge((\neg v5\_conlat\_1 \\ & (g2\_conlat\_1 X0 X1 X2) X0)\wedge((v7\_conlat\_1 (g2\_conlat\_1 X0 X1 X2) \\ & X0)\wedge(l2\_conlat\_1 (g2\_conlat\_1 X0 X1 X2) X0))))\Leftrightarrow(k3\_funct\_2 (k9\_setfam\_1 \\ & (u4\_struct\_0 X0)) (k9\_setfam\_1 (u1\_struct\_0 X0)) (k2\_conlat\_1 \\ & X0) (k3\_funct\_2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) (k9\_setfam\_1 ( \\ & u4\_struct\_0 X0)) (k1\_conlat\_1 X0) X1) = X1))) \end{aligned}$$