

### t3\_cat\_3

(TMccQRfZGgXx4iVCnNGky1Xz3h6zBs6tyzV)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((X0 \neq X1) \Rightarrow (k1\_funct\_1 \\ & (k4\_funct\_4 X0 X1 X2 X3) X0 = X2)) \wedge (k1\_funct\_1 (k4\_funct\_4 X0 X1 X2 \\ & X3) X1 = X3) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1\_xboole\_0 \\ & X0) \wedge ((m1\_subset\_1 X3 X0) \wedge (m1\_subset\_1 X4 X0))) \Rightarrow (k5\_funct\_4 X0 \\ & X1 X2 X3 X4 = k4\_funct\_4 X1 X2 X3 X4) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \neg v1\_xboole\_0 (k2\_tarski X0 X1) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1\_xboole\_0 \\ & X0) \wedge ((m1\_subset\_1 X3 X0) \wedge (m1\_subset\_1 X4 X0))) \Rightarrow ((v1\_funct\_1 \\ & (k5\_funct\_4 X0 X1 X2 X3 X4)) \wedge ((v1\_funct\_2 (k5\_funct\_4 X0 X1 X2 X3 \\ & X4) (k2\_tarski X1 X2) X0) \wedge (m1\_subset\_1 (k5\_funct\_4 X0 X1 X2 X3 X4) \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_tarski X1 X2) X0)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k2\_tarski X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (\forall X3.(X3 \in X0) \Rightarrow \\ & (k10\_funct\_2 X0 X1 X2 X3 = k1\_funct\_1 X2 X3)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarSKI X0 X1 = k2\_tarSKI X1 X0 \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow ((X0 \neq X1) \Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 X2) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X2) \Rightarrow \\ & ((k10\_funct\_2 (k2\_tarSKI X0 X1) X2 (k5\_funct\_4 X2 X0 X1 X3 X4) X0 = \\ & X3) \wedge (k10\_funct\_2 (k2\_tarSKI X0 X1) X2 (k5\_funct\_4 X2 X0 X1 X3 X4) \\ & X1 = X4)))))) \end{aligned}$$