

## l28\_graph\_1

(TMaHp1r2TkX9tHRRv12GXzCMvEk7f7WQH8b)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_graph\_1 : \iota \Rightarrow o$  be given. Let  $m3\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_graph\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_graph\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((r1\_tarski X0 X1) \wedge \\ & (r1\_tarski X2 X3)) \Rightarrow (r1\_tarski (k4\_partfun1 X0 X2) (k4\_partfun1 \\ & X1 X3)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow (X2 \in k4\_partfun1 X0 X1) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 \\ & X2 X0) \wedge (v5\_relat\_1 X2 X1))) \Rightarrow (r1\_tarski X2 (k2\_zfmisc\_1 X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ X0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_graph\_1\ X0)\Rightarrow((v1\_funct\_1\ (u2\_graph\_1\ X0))\wedge(( \\ v1\_funct\_2\ (u2\_graph\_1\ X0)\ (u4\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\wedge \\ (m1\_subset\_1\ (u2\_graph\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0 \\ X0)\ (u1\_struct\_0\ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_graph\_1\ X0)\Rightarrow((v1\_funct\_1\ (u1\_graph\_1\ X0))\wedge(( \\ v1\_funct\_2\ (u1\_graph\_1\ X0)\ (u4\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\wedge \\ (m1\_subset\_1\ (u1\_graph\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0 \\ X0)\ (u1\_struct\_0\ X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_graph\_1\ X0))\Rightarrow(\forall X1. \\ (m3\_graph\_1\ X1\ X0)\Rightarrow((\neg v2\_struct\_0\ X1)\wedge(l1\_graph\_1\ X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1)\Rightarrow((v5\_relat\_1\ X1\ X0)\Leftrightarrow(r1\_tarski\ (k10\_xtuple\_0\ X1)\ X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_graph\_1\ X0))\Rightarrow(\forall X1. \\ ((\neg v2\_struct\_0\ X1)\wedge(l1\_graph\_1\ X1))\Rightarrow((m3\_graph\_1\ X1\ X0)\Leftrightarrow((r1\_tarski \\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X0))\wedge((r1\_tarski\ (u4\_struct\_0 \\ X1)\ (u4\_struct\_0\ X0))\wedge(\forall X2.(X2 \in u4\_struct\_0\ X1)\Rightarrow((k1\_funct\_1 \\ (u1\_graph\_1\ X1)\ X2 = k1\_funct\_1\ (u1\_graph\_1\ X0)\ X2)\wedge((k1\_funct\_1 \\ (u2\_graph\_1\ X1)\ X2 = k1\_funct\_1\ (u2\_graph\_1\ X0)\ X2)\wedge((k1\_funct\_1 \\ (u1\_graph\_1\ X0)\ X2 \in u1\_struct\_0\ X1)\wedge(k1\_funct\_1\ (u2\_graph\_1\ X0) \\ X2 \in u1\_struct\_0\ X1)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & (m3\_graph\_1 X1 X0) \Rightarrow ((u1\_graph\_1 X1 \in k4\_part\_fun1 (u4\_struct\_0 \\ & X0) (u1\_struct\_0 X0)) \wedge (u2\_graph\_1 X1 \in k4\_part\_fun1 (u4\_struct\_0 \\ & X0) (u1\_struct\_0 X0)))) \end{aligned}$$