

t17\_graph\_1 (TMGXyqP-  
dRA8wXSqkKsofx1oCkAY8Yr96wWA)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_graph\_1 : \iota \Rightarrow o$  be given. Let  $r4\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m3\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_graph\_1 : \iota \Rightarrow \iota$  be given. Let  $u2\_graph\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \wedge ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1))) \Rightarrow (r4\_graph\_1 X0 X0) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. (m3\_graph\_1 X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow ((r4\_graph\_1 X0 X1) \Leftrightarrow (m3\_graph\_1 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow (((m3\_graph\_1 X1 X0) \Leftrightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge ((r1\_tarski (u4\_struct\_0 X1) (u4\_struct\_0 X0)) \wedge (\forall X2. (X2 \in u4\_struct\_0 X1) \Rightarrow ((k1\_funct\_1 (u1\_graph\_1 X1) X2 = k1\_funct\_1 (u1\_graph\_1 X0) X2) \wedge ((k1\_funct\_1 (u2\_graph\_1 X1) X2 = k1\_funct\_1 (u2\_graph\_1 X0) X2) \wedge ((k1\_funct\_1 (u1\_graph\_1 X0) X2 \in u1\_struct\_0 X1) \wedge (k1\_funct\_1 (u2\_graph\_1 X0) X2 \in u1\_struct\_0 X1)))))))))) \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\ & X2) \wedge (l1\_graph\_1 X2)) \Rightarrow (((r4\_graph\_1 X0 X1) \wedge (r4\_graph\_1 X1 X2)) \Rightarrow \\ & (r4\_graph\_1 X0 X2)))) \end{aligned}$$