

t24\_graph\_1  
(TMKCTt4Dmy1iYe34xy8CaSq4QJtQwGm1MEE)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_graph\_1 : \iota \Rightarrow o$  be given. Let  $r1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_graph\_1 : \iota \Rightarrow \iota$  be given. Let  $u2\_graph\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_graph\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r4\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow (((r1\_partfun1 (u1\_graph\_1 \\ & X0) (u1\_graph\_1 X1)) \wedge (r1\_partfun1 (u2\_graph\_1 X0) (u2\_graph\_1 \\ & X1))) \Rightarrow (k5\_graph\_1 X0 X1 = k5\_graph\_1 X1 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow (((r1\_partfun1 (u1\_graph\_1 \\ & X0) (u1\_graph\_1 X1)) \wedge (r1\_partfun1 (u2\_graph\_1 X0) (u2\_graph\_1 \\ & X1))) \Rightarrow ((r4\_graph\_1 X0 (k5\_graph\_1 X0 X1)) \wedge (r4\_graph\_1 X1 (k5\_graph\_1 \\ & X0 X1)))))) \end{aligned} \quad (2)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_graph\_1 X1)) \Rightarrow (((r1\_partfun1 (u1\_graph\_1 \\ & X0) (u1\_graph\_1 X1)) \wedge (r1\_partfun1 (u2\_graph\_1 X0) (u2\_graph\_1 \\ & X1))) \Rightarrow (((k5\_graph\_1 X0 X1 \neq X1) \wedge (k5\_graph\_1 X1 X0 \neq X1)) \vee (r4\_graph\_1 \\ & X0 X1)))))) \end{aligned}$$