

# l14\_grnilp\_1

(TML9gskwyNy9tvWeWnkuyZwUdaLbZAneZK3)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_group\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_group\_2 : \iota \Rightarrow \iota$  be given. Let  $k8\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ (m1\_group\_2 X2 X0) \Rightarrow ((m1\_group\_2 X1 (k8\_group\_4 X0 X1 X2)) \wedge (m1\_group\_2 \\ X2 (k8\_group\_4 X0 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow ((r1\_group\_2 \\ X0 (k8\_group\_4 X0 (k7\_group\_2 X0) X1) (k7\_group\_2 X0)) \wedge (r1\_group\_2 \\ X0 (k8\_group\_4 X0 X1 (k7\_group\_2 X0)) (k7\_group\_2 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (((v15\_algstr\_0 X1) \wedge \\ (m1\_group\_2 X1 X0)) \wedge ((v15\_algstr\_0 X2) \wedge (m1\_group\_2 X2 X0)))) \Rightarrow \\ & ((r1\_group\_2 X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge \\ (v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ (m1\_group\_6 X2 X0 X1) \Leftrightarrow (m1\_group\_2 X2 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 \\ & X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge((m1\_group\_2 X1 X0)\wedge \\ & (m1\_group\_2 X2 X0)))\Rightarrow((v15\_algstr\_0 (k8\_group\_4 X0 X1 X2))\wedge(m1\_group\_2 \\ & (k8\_group\_4 X0 X1 X2) X0)) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ & X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow((v15\_algstr\_0 (k7\_group\_2 X0))\wedge(m1\_group\_2 \\ & (k7\_group\_2 X0) X0)) \end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ & X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(m1\_group\_6 \\ & X1 X0 (k7\_group\_2 X0))) \end{aligned}$$