

# t60\_group\_9 (TMd- CRZE8QRbuzQBPhqj71bSkDcsGZR5BTTA)

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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  $v3\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_group\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_group\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2. ((v4\_group\_9 X2 X0 X1) \wedge (m1\_group\_9 X2 X0 X1)) \Rightarrow (\forall X3. \\ & (m1\_group\_9 X3 X0 X1) \Rightarrow (((v4\_group\_9 (k17\_group\_9 X0 X1 X3 X2) X0 \\ & X3) \wedge (m1\_group\_9 (k17\_group\_9 X0 X1 X3 X2) X0 X3)) \wedge ((v4\_group\_9 \\ & (k17\_group\_9 X0 X1 X2 X3) X0 X3) \wedge (m1\_group\_9 (k17\_group\_9 X0 X1 X2 \\ & X3) X0 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2. (m1\_group\_9 X2 X0 X1) \Rightarrow (\forall X3. (m1\_group\_9 X3 X0 \\ & X2) \Rightarrow (\forall X4. (m1\_group\_9 X4 X0 X2) \Rightarrow (\forall X5. (m1\_group\_9 \\ & X5 X0 X1) \Rightarrow (\forall X6. (m1\_group\_9 X6 X0 X1) \Rightarrow (((X3 = X5) \wedge (X4 = X6)) \Rightarrow \\ & (k17\_group\_9 X0 X1 X5 X6 = k17\_group\_9 X0 X2 X3 X4)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge ((v3\_group\_9 X1 X0) \wedge (l1\_group\_9 X1 X0)))) \Rightarrow ( \\ & \forall X2. (m1\_group\_9 X2 X0 X1) \Rightarrow (\forall X3. (m1\_group\_9 X3 X0 \\ & X1) \Rightarrow (\forall X4. (m1\_group\_9 X4 X0 X1) \Rightarrow (k17\_group\_9 X0 X1 (k17\_group\_9 \\ & X0 X1 X2 X3) X4 = k17\_group\_9 X0 X1 X2 (k17\_group\_9 X0 X1 X3 X4)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge \\ & (v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge(l1\_group\_9 X1 X0))))\Rightarrow( \\ & \forall X2.(m1\_group\_9 X2 X0 X1)\Rightarrow(\forall X3.((v2\_group\_9 X3 X0)\wedge \\ & (m1\_group\_9 X3 X0 X1))\Rightarrow((m1\_group\_9 X3 X0 X2)\Leftrightarrow(k17\_group\_9 X0 X1 \\ & X3 X2 = X3)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge \\ & (v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge(l1\_group\_9 X1 X0))))\Rightarrow( \\ & \forall X2.(m1\_group\_9 X2 X0 X1)\Rightarrow(\forall X3.(m1\_group\_9 X3 X0 \\ & X1)\Rightarrow(m1\_group\_9 (k17\_group\_9 X0 X1 X2 X3) X0 X2))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge \\ & (v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge(l1\_group\_9 X1 X0))))\Rightarrow( \\ & \forall X2.(m1\_group\_9 X2 X0 X1)\Rightarrow((\neg v2\_struct\_0 X2)\wedge((v2\_group\_1 \\ & X2)\wedge((v3\_group\_1 X2)\wedge((v3\_group\_9 X2 X0)\wedge(l1\_group\_9 X2 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0 \\ & X1)\wedge((v2\_group\_1 X1)\wedge((v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge \\ & l1\_group\_9 X1 X0))))\wedge((m1\_group\_9 X2 X0 X1)\wedge(m1\_group\_9 X3 X0 \\ & X1)))\Rightarrow((v2\_group\_9 (k17\_group\_9 X0 X1 X2 X3) X0)\wedge(m1\_group\_9 ( \\ & k17\_group\_9 X0 X1 X2 X3) X0 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0 \\ & X1)\wedge((v2\_group\_1 X1)\wedge((v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge \\ & l1\_group\_9 X1 X0))))\wedge((m1\_group\_9 X2 X0 X1)\wedge(m1\_group\_9 X3 X0 \\ & X1)))\Rightarrow(k17\_group\_9 X0 X1 X2 X3 = k17\_group\_9 X0 X1 X3 X2) \end{aligned} \quad (8)$$

### Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge \\ & (v3\_group\_1 X1)\wedge((v3\_group\_9 X1 X0)\wedge(l1\_group\_9 X1 X0))))\Rightarrow( \\ & \forall X2.((v2\_group\_9 X2 X0)\wedge(m1\_group\_9 X2 X0 X1))\Rightarrow(\forall X3. \\ & ((v2\_group\_9 X3 X0)\wedge(m1\_group\_9 X3 X0 X1))\Rightarrow(\forall X4.((v2\_group\_9 \\ & X4 X0)\wedge(m1\_group\_9 X4 X0 X1))\Rightarrow(((v4\_group\_9 X3 X0 X4)\wedge(m1\_group\_9 \\ & X3 X0 X4))\Rightarrow((v4\_group\_9 (k17\_group\_9 X0 X1 X2 X3) X0 (k17\_group\_9 \\ & X0 X1 X2 X4))\wedge(m1\_group\_9 (k17\_group\_9 X0 X1 X2 X3) X0 (k17\_group\_9 \\ & X0 X1 X2 X4)))))) \end{aligned}$$