

## t37\_bvfunc14

(TMS5J4pvpQ3hdqxhtpwycTUyRdmvt2WeW5)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. \forall X2. k1\_funct\_1 (k1\_funct\_4 X0 (k16\_funcop\_1 X1 X2)) X1 = X2) \quad (1)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \neg (X5 \neq X4) \wedge ((X5 \neq X1) \wedge (k1\_funct\_1 (k1\_funct\_4 (k1\_funct\_4 X0 (k16\_funcop\_1 X1 X2)) (k16\_funcop\_1 X4 X3)) X5 \neq k1\_funct\_1 X0 X5))) \quad (2)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. \forall X2. \forall X3. (X1 \neq X3) \Rightarrow (k1\_funct\_1 (k1\_funct\_4 X0 (k16\_funcop\_1 X1 X2)) X3 = k1\_funct\_1 X0 X3)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((v1\_relat\_1 X5) \wedge (v1\_funct\_1 X5)) \Rightarrow (\forall X6. \forall X7. \forall X8. \\ & \forall X9. \forall X10. (X5 = k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 \\ & (k1\_funct\_4 (k16\_funcop\_1 X1 X7) (k16\_funcop\_1 X2 X8)) (k16\_funcop\_1 \\ & X3 X9)) (k16\_funcop\_1 X4 X10)) (k16\_funcop\_1 X0 X6)) \Rightarrow ((X0 = X1) \vee \\ & ((X0 = X2) \vee ((X0 = X3) \vee ((X0 = X4) \vee ((X1 = X2) \vee ((X1 = X3) \vee ((X1 = X4) \vee \\ & (X2 = X3) \vee ((X2 = X4) \vee ((X3 = X4) \vee ((k1\_funct\_1 X5 X0 = X6) \wedge ((k1\_funct\_1 \\ & X5 X1 = X7) \wedge ((k1\_funct\_1 X5 X2 = X8) \wedge ((k1\_funct\_1 X5 X3 = X9) \wedge (k1\_funct\_1 \\ & X5 X4 = X10)))))))))))))) \quad (4) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ & \quad v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ & (v1\_funct\_1 X2)) \Rightarrow (k1\_funct\_4 (k1\_funct\_4 X0 X1) X2 = k1\_funct\_4 \\ & \quad X0 (k1\_funct\_4 X1 X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k16\_funcop\_1 X0 X1)) \wedge (v1\_funct\_1 (k16\_funcop\_1 X0 X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge (( \\ & \quad v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k1\_funct\_4 X0 \\ & \quad X1)) \wedge (v1\_funct\_1 (k1\_funct\_4 X0 X1))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. ((v1\_relat\_1 X6) \wedge (v1\_funct\_1 X6)) \Rightarrow (\forall X7. \forall X8. \\ & \quad \forall X9. \forall X10. \forall X11. \forall X12. (X6 = k1\_funct\_4 \\ & \quad (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 (k16\_funcop\_1 \\ & \quad X1 X8) (k16\_funcop\_1 X2 X9)) (k16\_funcop\_1 X3 X10)) (k16\_funcop\_1 \\ & \quad X4 X11)) (k16\_funcop\_1 X5 X12)) (k16\_funcop\_1 X0 X7)) \Rightarrow ((X0 = X1) \vee \\ & ((X0 = X2) \vee ((X0 = X3) \vee ((X0 = X4) \vee ((X0 = X5) \vee ((X1 = X2) \vee ((X1 = X3) \vee ( \\ & (X1 = X4) \vee ((X1 = X5) \vee ((X2 = X3) \vee ((X2 = X4) \vee ((X2 = X5) \vee ((X3 = X4) \vee ( \\ & X3 = X5) \vee ((X4 = X5) \vee ((k1\_funct\_1 X6 X0 = X7) \wedge ((k1\_funct\_1 X6 X1 = X8) \wedge \\ & ((k1\_funct\_1 X6 X2 = X9) \wedge ((k1\_funct\_1 X6 X3 = X10) \wedge ((k1\_funct\_1 \\ & \quad X6 X4 = X11) \wedge (k1\_funct\_1 X6 X5 = X12)))))))))))))))))) \end{aligned}$$