

t49_bvfunc14

(TMGby7mS81oGqZjuE5yiHD6jKXAhRzD96g8)

October 27, 2020

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.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge \\ (v1_funct_1 X2)) \Rightarrow (k1_funct_4 (k1_funct_4 X0 X1) X2 = k1_funct_4 \\ X0 (k1_funct_4 X1 X2)))) \end{aligned} \quad (5)$$

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.

$$\begin{aligned} \forall X0. \forall X1. (((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\ v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k1_funct_4 X0 \\ X1)) \wedge (v1_funct_1 (k1_funct_4 X0 X1))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ \forall X6. \forall X7. ((v1_relat_1 X7) \wedge (v1_funct_1 X7)) \Rightarrow (\forall X8. \\ \forall X9. \forall X10. \forall X11. \forall X12. \forall X13. \forall X14. \\ (X7 = k1_funct_4 (k1_funct_4 (k1_funct_4 (k1_funct_4 (k1_funct_4 \\ (k1_funct_4 (k16_funcop_1 X1 X9) (k16_funcop_1 X2 X10)) (k16_funcop_1 \\ X3 X11)) (k16_funcop_1 X4 X12)) (k16_funcop_1 X5 X13)) (k16_funcop_1 \\ X6 X14)) (k16_funcop_1 X0 X8)) \Rightarrow ((X0 = X1) \vee ((X0 = X2) \vee ((X0 = X3) \vee (\\ (X0 = X4) \vee ((X0 = X5) \vee ((X0 = X6) \vee ((X1 = X2) \vee ((X1 = X3) \vee ((X1 = X4) \vee (\\ X1 = X5) \vee ((X1 = X6) \vee ((X2 = X3) \vee ((X2 = X4) \vee ((X2 = X5) \vee ((X2 = X6) \vee ((X3 = \\ X4) \vee ((X3 = X5) \vee ((X3 = X6) \vee ((X4 = X5) \vee ((X4 = X6) \vee ((X5 = X6) \vee ((k1_funct_1 \\ X7 X0 = X8)) \wedge ((k1_funct_1 X7 X1 = X9) \wedge ((k1_funct_1 X7 X2 = X10) \wedge ((k1_funct_1 \\ X7 X3 = X11) \wedge ((k1_funct_1 X7 X4 = X12) \wedge ((k1_funct_1 X7 X5 = X13) \wedge (\\ k1_funct_1 X7 X6 = X14)))))))))))))))))))))))))))))))))))))) \end{aligned}$$